EXHIBIT 12

Version 3.1

Amtrak® Fleet Strategy

Building a Sustainable Fleet for the Future

of America's Intercity and High-Speed Passenger Railroad

AMTRAK®

March 2012

Version List

Version	Revision	Description		Date
1	A	First Revision		February 1, 2010
2	A	Annual Reissue		February 18, 2011
3	D	Annual Reissue - Draft		February 27, 2012
3.1	A	Annual Reissue - Final		March 29, 2012

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1. Executive Summary

The heart of Amtrak's ability to deliver competitive intercity rail transportation service is the fleet that we operate. The fleet affects customer perception, the willingness to use our product and services, product reliability, and the costs of maintenance and service delivery.

As the national intercity passenger service provider, Amtrak relies on Federal support to maintain, operate and improve its services. While Amtrak covers approximately 85% of its annual operating costs from revenues, sustained capital support from federal and state sources is essential.

The level of federal capital investment has never been sufficient. This problem constrains Amtrak's ability to deliver the service our customers deserve and limits our ability to replace aging equipment. This report lays out a strategy for recapitalizing the entire fleet in the coming years. This approach provides a long term vision and strategy to provide new and attractive equipment and services for our customers.

Figure 1: P-42 Diesel locomotive hauling a long distance train

The need to commence fleet recapitalization is urgent. The average age of our equipment is just over 28 years. As that equipment has progressively aged, the demands on our maintenance organization have grown and service delivery has become more challenging and expensive. Aging components and a steadily higher level of obsolescence are growing problems, often compounded when parts suppliers exit the supply chain. Some equipment is not well suited to year-round service in cold climates. In addition, customers perceive an aged and tired fleet which has consequences for ridership and revenue that are best counteracted by the introduction of new equipment.

The basic premise of this update of the Fleet Strategy is to represent the current thinking regarding existing fleet replacement in an expedited and condensed timeframe as is explained throughout this document. This report analyzes the equipment Amtrak needs to replace within the existing fleet capacity and manage the forecasted growth in network demand with a sampling of the current equipment being retained to accommodate the demand growth. It lays out a strategic approach to equipment acquisition and funding requirements that are necessary to meet the anticipated needs of our system. The assumptions that underpin this strategy are an extension of the 2011 Fleet Strategy in the three (3) major Amtrak business lines: 1.) the Northeast Corridor (NEC), 2.) Long Distance Services and 3.) State Corridors (both existing and new). This approach is consistent with the goals set by the Passenger Rail

Investment and Improvement Act of 2008 (PRIIA), which reauthorized Amtrak and established new programs for the development of the intercity passenger railroad system within the United States. It is also consistent with the increases in demand Amtrak has seen in recent years. New equipment is a vital pre-requisite to the improved passenger rail service envisioned by PRIIA, and replacement equipment investments must be made if the service is to be both sustained and grown. Rebuilding aging equipment is always a temporary solution and does not save money in the long term. If passenger rail service is to be sustained and grown, equipment investment must be accepted as part of the process.

This report will be maintained as a living document, to serve as the cornerstone of future planning. It will be updated regularly on the basis of the actions that are implemented and developments in the market to take account of internal initiatives, business case analyses and strategic service decisions in response to market developments. This update to the 2011 Fleet Strategy is the first step in a more robust process for fleet planning.

Amtrak has defined lifing policies for all of its passenger equipment types within this report. There are two (2) main criteria of lifing to be defined. The first is *Useful Life* and the second is *Commercial Life*. Useful Life is a generic and somewhat arbitrary age-based definition of 30 years for locomotives and 40 years for passenger cars. Useful Life does not take account of condition of the equipment or investments to extend its life. Commercial Life is a combination of a number of factors including: maintainability, availability, technical capability, customer acceptance and capital availability. Further details are noted in Section 9, "Commercial and Useful Life of Equipment."

Figure 2: F-59 Diesel locomotive hauling superliner cars

These policies are based on a combination of operational, maintenance, customer environment and financial factors. These policies are the basis for a concrete strategy to introduce and replace equipment.

The current fleet is comprised of:

Table 1: Current Fleet Counts

Fleet Type	Total Fleet (Including 3rd party units)	Active Fleet (Net of storage, wrecks, lease outs)	Available Fleet (Net of planned shop counts)	Peak Requirement (Accumulated/ planned consists at weekly/ seasonal peaks)
Cars	1,988	1,553	1,326	1,156
Locomotives	442	396	328	281
Train Sets (25)				
- Cars	182	181	154	154
- Locomotives	46	46	37	37
Total	**2,658**	**2,176**	**1,845**	**1,628**

Based upon defined lifing policies, the Amtrak mission to replace the current fleet requires the following equipment purchases over the next 11 years:

- 70 electric locomotives (on order)
- 40 additional coaches to expand the existing high speed trainsets portfolio along with 20 replacement and 22 additional high speed trainsets
- 825 single level cars (inclusive of the 130 Long Distance Single Level (LDSL) car order)
- 508 bi-level cars (including Surfliner, Superliner and Parlor cars)
- 280 diesel locomotives
- 42 switcher locomotives

Such a program will require several billion dollars of investment. Financial projections including pricing assumptions are noted in the "Government Audience Only" appendix as a subset of the Fleet Strategy.

This will complete the first cycle of equipment replacement. After much discussion, and based on the current age of the fleet and projections for available funding, Amtrak has elected to revise the projections since last years report to expedite equipment acquisitions to enable more timely and much needed replacement of the fleet.

Since the previous issue of this report, two (2) major contracts have been awarded for new equipment:

- 70 new electric locomotives to replace all of the AEM-7 and HHP-8 locomotives
- 130 new Long Distance Single Level (LDSL) cars to replace Heritage cars and bolster capacity on long distance services

The remaining priority purchases envisioned for the fleet are as follows:

- Adding 40 cars to existing *Acela* trainsets to increase seat capacity
- Planning the next generation of high speed equipment
- Replacement of approximately 145 Amfleet II cars (new single level car)
- 80 auto carrier cars
- Evaluation of a multi-level corridor car to replace single level cars where clearances permit

Cars will be withdrawn as replacements arrive and retirement will be evaluated as service demand indicates during the transition period from old to new equipment.

The capital costs associated with this program (through 2042) are significant and will be included in the "Government Audience Only" appendix to this Fleet Strategy. These projections include the cost of the equipment, project management expenses of large scale acquisition activity, modifications to the maintenance infrastructure to support new equipment and an adequate supply of spare parts.

Follow on work to this report will include an investigation of the relative merits of traditional consists and fixed trainsets (as used by the *Acela*, the *Cascades* service and many foreign providers, as referenced and discussed further in Section 21). Additionally, a structured research and development process is required and will be implemented to ensure future fleet acquisition procurement decisions have sufficient data to support decisions on equipment procurement, including specifications.

This strategy provides Amtrak with a flexible and adaptable approach to fleet management including the replacement of aging equipment and procurement of additional fleet units to meet the projected demand for our service.

2. Introduction

The *Strategic Plan FY2011 – FY2015* imparts the vision of the company as: *Amtrak is America's first intercity travel choice for connections to and between the nation's key metropolitan areas, providing customer-driven, safe, environmentally-sustainable, energy-efficient and inter-modally linked service to passengers, communities and partners. Through recognized organizational excellence, Amtrak's diverse and talented team will lead the development and growth of the high-speed and intercity passenger rail system in North America.*

Additionally, the "Transportation, Housing and Urban Development and Related Agencies Appropriation Act, 2012" mandated the delivery of a fleet strategy that not only covers the immediate issues to be dealt with in the next few years but also puts together a solid plan to address fleet issues and align our planned procurements with market demand.

In the first publications of the Fleet Strategy, Amtrak's executive team defined a strategic vision for the fleet to determine what was needed and the necessary changes those needs would entail. This vision affected both acquisition methodology and projected equipment requirements. This report integrates that guidance with pre-existing planning efforts. The details of the development process are provided in Section 3.

Figure 3: P32 Dual mode locomotive

The strategy contained herein is designed to cover not only equipment needs for the coming years but also Amtrak's equipment acquisition planning strategy and process. The goal of this process is to meet the needs of our current customers and inspire new customers to use our services.

The Office of Inspector General (OIG) recently briefed Amtrak management on the results of its evaluation of the original Fleet Strategy, which was issued in February 2010. The evaluation identified a number of opportunities to strengthen the fleet planning process in order to generate more precise estimates of fleet requirements. The OIG issued their formal report March 31, 2011.

Based on a review of the OIG's findings, management's assessment is that the OIG's evaluation was undertaken in a thorough and disciplined manner and that the results will help us to improve the next updates of the fleet strategy. We have made adjustments to this fleet strategy update to further address the OIG's recommendations. We plan to incorporate other recommendations throughout the on-

going fleet strategy updates process. In other cases, additional analysis and discussion is needed regarding the approaches recommended by the OIG.

Our approach is consistent with Amtrak's fleet planning strategy, which is to provide annual updates that are increasingly more disciplined and precise. We will continue to work with the OIG to ensure that its insights are incorporated into the next edition of the Fleet Strategy and the strategy is updated as appropriate.

3. Fleet Strategy Process

The fleet planning process is designed to shape the fleet so that it delivers the services customers want, meets the strategic requirements of the business regarding sustainability, enhances the product we offer to our customers and identifies the funding requirements to meet these goals.

At the heart of the planning process are two (2) key requirements. First is our estimate (obtained through demand modeling) of the seat requirements over the life of the rolling stock. Second is our assessment of equipment life. When these requirements are overlaid on the existing fleet and its retirement profile, we can generate a new level of equipment demand over time. Amtrak has identified the proposed commercial life for each equipment type discussed in Section 9, "Commercial and Useful Life of Equipment."

Section 9 shows the age profile of the existing fleet, which is undesirably high. Based on the current fleet size and the lifing policy, significant numbers of the fleet are in need of replacement.

Figure 4: Cab Car used for push-pull operations

Analysis of the demand for new and existing routes is ongoing and depends on a number of factors. The analysis to date has therefore been undertaken on the basis of a conservative estimate of 2% secular growth on the existing system.

Amtrak continues to evaluate the future demand across the entire route network. This analysis is based on current trends being experienced, potential changes in travel patterns that may result from outside influences and the impacts that changes in service offerings may provide.

The analysis will inform planning for fleet requirements. In the meantime, the fleet strategy perpetuates the assumptions from the previous year of 2% ridership growth. Amtrak believes that this assumption is conservative. Below is a table outlining the ridership growth over the past five (5) years and it can be seen that the 2% figure has been exceeded with an average of 4.5 per annum, even when the FY2009 ridership drop at the worst of the economic slump) is factored in. Over the long term, however, 2% per annum adds up to substantial growth and requires considerable additional equipment, above and beyond that required simply to replace the existing fleet.

Table 2: Amtrak Ridership Growth FY2006-FY2011

Fiscal Year	NEC SPINE Ridership	NEC SPINE Growth	State & Other Corridors Ridership	State & Other Corridors Growth	Long Distance Ridership	Long Distance Growth	Total Amtrak Ridership	Total Amtrak Growth
FY 06	9.43		11.14		3.73		24.31	
FY 07	10.04	6.40%	11.99	7.62%	3.82	2.36%	25.85	6.34%
FY08	10.90	8.60%	13.65	13.80%	4.17	9.19%	28.72	11.10%
FY09	9.95	-8.73%	13.02	-4.59%	4.20	0.68%	27.17	-5.40%
FY10	10.38	4.32%	13.87	6.49%	4.47	6.58%	28.72	5.70%
FY11	10.90	5.06%	14.77	6.48%	4.52	1.05%	30.19	5.12%

* millions of passengers

As noted elsewhere in this report, the conservatism of this projection has been criticized. As the identified core procurement capabilities are established, it will be a relatively easy matter to increase the size of procurements if demand requires and appropriate funding can be found. For the short term, demand growth will be managed by retaining a portion of the fleet that is currently in service.

Whatever the level of growth, the effect of variations will not really affect fleet composition for 10 - 15 years. The existing age profile of the fleet and the need for new equipment means that the early years will be consumed largely in fleet replacement, rather than long-term capacity growth. The strategy will naturally be adjusted as circumstances require.

These assumptions are based on experience with the costs of major procurement programs, data on the equipment costs from previous and current acquisitions and current commuter equipment prices. As Amtrak's acquisition programs develop, they will become a data source for future versions of this strategy.

Assumptions: The following assumptions have been used to define fleet requirements. They are broken down into the following categories:

- Age: Amtrak has defined the commercial life assumptions for each equipment type (see Section 9).

- Equipment Requirements: A baseline requirement for the replacement of the existing fleet has been included. It has been assumed that new equipment will deliver capacity at the same level as the present fleet. There are a number of limitations to this assumption, which could cause variations in future procurement runs.

- Americans with Disabilities Act (ADA) Compliance: New equipment will have to be fully compliant with the requirements of ADA. This is likely to reduce the seating capacity of new cars. The actual reduction in seating capacity is under review; fleet

size requirements may rise, but it is also possible that new interior configurations could mitigate capacity losses.

- Maintenance methodology and operational spares: New equipment could bring a change in maintenance philosophy and assumptions about spare equipment requirements to meet overhaul, running maintenance and operational spare needs. If a more efficient model is adopted, greater equipment availability will reduce the number of cars required. No data is presently available to justify such a reduction but it remains under investigation.

- Attrition: Throughout the course of the life of an equipment type, accidents will occur that will remove cars and engines from service. At any given time, some percentage of the fleet will not be available. Some wrecked or damaged equipment will be beyond economical repair. Therefore, a margin must be included to allow service needs to be met over the full life of the fleet.

- Composition: This strategy assumes new single level cars will replace existing single level cars, and bi-level cars will require bi-level replacements, with the exception of Midwest service, where bi-level equipment is planned to replace single-level equipment, as discussed further in Section 15. The potential for multi-level type equipment on the NEC is discussed in Section 20.

- Level of analysis: Equipment needs have been analyzed from a strategic perspective. Fleet sizes, annual acquisition rates, costs of equipment and the associated spares and infrastructure have been modeled, but sub-classes (diners, sleepers, coaches, baggage cars, etc.) have not.

- Pricing: Financial projections including pricing assumptions are noted in the "Government Audience Only" appendix as a subset of the Fleet Strategy.

- Associated costs: are assumed to include:

    - Project Management costs at 5% of equipment cost
    - Capital spares and initial spares cost at 10% of equipment cost
    - Maintenance facility upgrades and training total 10% of equipment cost

- Facility costs: Incremental costs associated with the introduction of new equipment into existing facilities. These upgrades are an integral part of the equipment acquisition. They do not include new facility construction nor do they cover state of good repair needs at existing facilities, or any other infrastructure costs.

- Delivery Rate: The delivery rate of new equipment has been tailored to meet a number of requirements, foremost among them the backlog of aging equipment and the desire to develop a smooth annual procurement stream. Other courses of action may stress the supplier base, Amtrak's maintenance and operating forces, and our likely funding sources, and would ensure that we face the same problem with block obsolescence in the future. This will require a number of cars to be operated for a period well beyond their commercial life. However, the cars can be sustained in service in order to allow a more sustainable approach to be implemented. This approach is feasible for both single and bi-level car types; locomotive procurements will, however, be more sporadic, because of the smaller fleet size. In these cases, the focus is on ensuring the programs are of sufficient size to get value for money from the supplier base and provide a fleet that is sufficiently common to allow it to be maintained and sustained on an affordable basis.

- Build Rate: This strategy models a build rate of 100 single level and 100 bi-level cars to be placed into service each year over seven (7) and five (5) year periods – respectively. It is estimated that the previous edition's proposed level loading of 65 and 35 cars per year was inadequate to spur the interest of the supplier base and extended the in-servicing time far too long to meet Amtrak's needs for fleet replacement.

Figure 5: Amfleet I Coach

- Overhaul Cost Assumptions: In planning the commercial life of the equipment, it is assumed that sufficient investment is made in the equipment throughout its life for it to retain commercial value. This investment is a combination of rehabilitation and enhancement of the passenger environment and investment in the equipment systems through periodic overhauls. These costs are separate from the scheduled maintenance activities that are necessary to keep the equipment in service on a daily basis. These investments have been planned at intervals throughout the equipment life and the scope and cost of each element are dependent on the area of the equipment involved and the frequency planned (e.g. the interior gets a minor refresh at the shorter interval and a more substantial upgrade at approximately mid-life). Overhaul investments are not included in the cost estimates in this plan, are included in the capital plan and will be incurred on the existing fleet units until replaced.

  The average cost of overhaul by fleet type is noted in the table below:

Table 3: Average Overhaul Costs

Average costs for overhaul in FY2012 dollars:

Single Level Cars	$375K
Bi-Level Cars	$480K
Electric Locomotives	$700K
Diesel Locomotives *	$102K
High Speed Trainsets	$10.0M / trainset

* Life Cycle Preventive Maintenance (LCPM) - cost noted does not include monthly service agreement charges of $3,500. / month / locomotive

- **Scalability: In the first two editions of the Fleet Strategy, reference was made to scalability of the acquisition programs. It is important to note that this strategy has considerable scope for scalability. Given that Amtrak has commenced several significant acquisition programs, the option to scale the procurements is considerably easier to achieve. If growth is above projections, two options are available. In the short term, the retirement rate of existing equipment can be reduced. In the longer term, additional orders can be added through options and new acquisitions. Increasing the number of cars is largely a function of funding. Conversely, if growth does not meet projections, the rate of retirements can be increased while progressively scaling back the new equipment needs over the longer term.**

The fleet planning process will be fluid, and this document will be updated to reflect its evolution. As service parameters and resulting demand levels are analyzed in support of procurement business cases, the fleet strategy will be updated to reflect those changes and, as the future requirements are modeled and our conversations with the states regarding their needs take shape, the impact on the acquisition process will be determined and revised. By adopting this approach, changes in demand can be accommodated through expansion of existing acquisition programs and revision of planned upcoming programs.

As the organization evolves its acquisition strategies, the key determinant will be the availability and consistency of funding to meet our procurement needs.

The role of the Fleet Strategy positions in Finance, provide dedicated, full time monitoring of fleet related implementations and changes in service strategies in order to constantly review and modify the overall Fleet Strategy. Although annual updates will be published, Amtrak is committed to continuous processes to guide and react to changes throughout the year.

4. Context for Amtrak's Fleet Strategy

Amtrak has built its fleet strategy on a thorough understanding of the intercity passenger rail business, a flexible but conservative view of its growth prospects, and a clear vision of Amtrak's role: to build U.S. intercity passenger rail on the foundation of rail's inherent advantages as a greener and safer form of travel. To that end, this strategy has also been designed to support development of a collaborative future vision, in partnership with the FRA and states, to address a national agenda for dramatically expanding intercity passenger rail.

Market Context

Amtrak's business includes three (3) major categories of service: 1.) Northeast Corridor (NEC), 2.) Long Distance and 3.) State Supported/Short Distance Corridor services. For each service, three (3) potential "growth options" were considered:

- Baseline growth associated with increased demand for existing services.
- Incremental growth from market demand stimulated by substantial service improvements due to new investment in rail infrastructure.
- Externally driven growth due to a "seismic" change in demand – such as dramatically increased gasoline prices or collapse of a competing travel mode – that generates dramatic increases in demand.

This fleet strategy is scaled to resource baseline needs, but is also designed to allow scalable procurement growth to respond to higher demand levels. Amtrak presently operates intercity service across the United States, and is in some places a contract commuter rail operator. The current intercity passenger route map is included below:

Figure 6: Amtrak Route Network

The service provided is a combination of corridor and long distance services. Corridor routes generally serve highly traveled areas and offer multiple daily frequencies. Long distance services connect multiple regions on a daily or tri-weekly schedule. (Section 3 has a more detailed analysis of current and projected demand). The fleet strategy must support the delivery of these services in a manner that satisfies our customers.

Northeast Corridor (NEC)

The NEC is Amtrak's largest revenue generating business line with 52 percent of all Amtrak ticket revenues and its second largest ridership generating business line. For the purposes of this report, the "NEC" includes the main line linking Boston, Massachusetts to Washington, D.C., as well as connecting state supported/other corridors from Massachusetts to Virginia over which *Northeast Regional* service operates.

The combination of *Acela Express* and Northeast Regional trains provides a product to a broad range of customers for both business and leisure travel. Traffic in this region has grown strongly in recent years as Amtrak has offered competitive city center trip times and improvements in reliability that compare favorably to other transportation options. In some places, both the infrastructure and the equipment are now operating at their capacity, particularly during peak demand periods.

The NEC still has capacity to support limited growth in ridership in some specific services in some frequencies. It is, however, clear that infrastructure capacity will begin to limit growth within a decade, and that infrastructure upgrades will be needed to support the additional demand. The NEC as a travel market has begun to mature and under current service and trip time conditions demand is conservatively projected to grow at an average annual rate of two (2) percent in this strategy.

Figure 7: *Acela* is the premium northeast corridor service

With investment in infrastructure upgrades, it will be possible to effect trip time reductions that will significantly increase ridership. Such infrastructure changes will require significant Federal, state or other funding, take a number of years to complete, require the agreement of multiple parties and detailed environmental assessments. With significant Federal funding now available for high speed and intercity passenger rail corridor development and a Federal commitment to achieve a state of good repair expressed through the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), the work to advance the development of the NEC has begun. Once these upgrades are in place, annual growth rates of five (5) percent or higher are feasible.

Annual growth rates of two (2) to five (5) percent – which equate over 20 years to total growth in the range of 49 to 165 percent – assume that the general market context for the intercity system remains constant. If there were to be a significant change in one of more market drivers, such the cost of oil, this could have a fundamental impact on total demand and market share for rail. While the level of change is speculative, the approach to rail fleet and infrastructure should be flexible enough to respond to such changes.

Long Distance Services

In recent years, Amtrak's Long Distance services – those operating more than 750 miles and often overnight – have grown around two (2) percent annually. This gradual increase in demand can be satisfied through the progressive replacement of equipment and lengthening of existing train consists.

Figure 8: Viewliner sleeper car as used on long distance services

Current Federal funding for Amtrak's long distance services, as authorized by PRIIA, does not support significant service increases. Consequently, only the secular growth is presently envisioned for these services. Such a growth model could be altered if the funding to support it were available.

If Amtrak decides to expand long distance service, the fleet strategy will be adjusted to reflect the greater equipment need. As with the NEC, a major change in transportation patterns driven by external factors could result in a significant change in the demand for long distance trains. In that case, the fleet planning process is designed to accommodate such growth as it occurs.

Despite the secular growth scenario anticipated for Long Distance service, the fact that this existing fleet of both single level and bi-level equipment is scheduled for replacement with a new generation of conventional rolling stock creates an opportunity to advance a fleet acquisition strategy for conventional equipment for both state supported corridors and the NEC. The next generation of single and multi-level passenger coaches and café cars is being designed to meet the needs of corridors and Long Distance service. Amtrak continues to evaluate the need and viability of multi-level equipment and future updates of this strategy will reflect those learning's and decisions.

State-Supported/Other Corridors

Amtrak's State-Supported and Short Distance Corridors combined have the highest ridership of the three (3) business lines. Ridership growth in recent years has been strong across the state corridors and is anticipated to continue to be so. Without any change in service patterns or infrastructure, the 2% per annum growth rate is considered a reasonable estimate for the routes that Amtrak currently operates.

In light of existing state commitments to build and expand on these services, additional route and service improvements are likely. These improvements will include additional services on current routes as well as development of new corridors, recent approvals of higher speed routes in Michigan and increased high speed interest by the Illinois Department of Transportation. Nearly all of the proposed initiatives will require support through the PRIIA-authorized capital grant programs.

Amtrak is working to continue a close and collaborative relationship with its state partners to develop these services. As new or improved services are funded and introduced in the coming years, our fleet strategy will be adjusted to incorporate new services and service growth on top of the baseline fleet requirements.

Figure 9: The Cascades service is the product of a partnership between Washington State DOT and Amtrak

Additionally, as with Amtrak's other business lines, major changes in transportation patterns driven by external factors could result in a significant change in demand for corridor services and the fleet planning process set forth here is designed to accommodate such growth as it occurs.

Growth Strategy

The market context makes clear that Amtrak can reasonably and conservatively expect a baseline annual growth in demand of at least 2%. The strategy will be updated to capitalize in a fiscally prudent way on changes in market demand.

To that end, the strategy is designed around the secular growth case, which incorporates the demand for new equipment as well as replacement equipment. The need to replace is a result of years of underinvestment, which have left a substantial backlog of aging equipment. Addressing this backlog creates an opportunity to replace the fleet in a measured but expeditious acquisition process.

Amtrak has already begun three (3) major equipment acquisition programs. New equipment acquisitions are now being executed by project teams lead by Project Team

Leaders to manage the entire end-to-end procurement process including the facility modification needs. This oversight is in place and is functioning with the builds of the electric locomotives, the long distance single level cars and for the proposed cars for the *Acela* services. This same methodology will be utilized for the procurement of every type of equipment in this strategy.

5. What are the Major Changes in the 2012 Strategy?

The fleet strategy has been updated throughout to reflect the current state of the fleet, programs that are underway and changes in the larger business environment. This is a summary of the major changes that have taken place in the last year and their impacts on the fleet strategy.

- Two (2) major acquisition contracts have been awarded.
    - Siemens Transportation was awarded a contract for 70 new electric locomotives. These locomotives will replace all of the electric locomotives in service on the NEC. A test locomotive is due for delivery in the fall of 2013, with service delivery beginning the following year.
    - CAF USA was awarded a contract for 130 Long Distance Single level (LDSL) cars. Delivery is expected to begin September 2013 with the majority of the new cars being placed in service throughout 2014. The new cars will replace the single level Heritage cars and bolster capacity on the single level long distance fleet.
- Amtrak is heavily committed to the work of the PRIIA Section 305 Next Generation Equipment Committee (NGEC). This process, which has been a partnership between Amtrak, the states, the FRA and industry participants, has generated specifications for new corridor equipment including a multi-level car, a single level car and a high speed diesel locomotive. Amtrak will use these specifications in coming rounds of equipment procurement. The strategy has also been updated to reflect the possible introduction of multi-level cars to corridor service to replace single level cars, where practicable.
- Amtrak has issued a major strategy for NEC service development. This strategy has long term goals for higher speed service and provides options for service development. These strategies are reflected in this update to the Fleet Strategy. In addition, options previously identified for *Acela* capacity growth have been analyzed and a stair-step plan is now underway. This includes additional capacity for the existing trainsets, additional trainsets to increase frequency of service and the eventual replacement of the existing trainsets. Amtrak will continue to review and update service plans as new information on passenger demand both on and off of the NEC.
- The review of capacity growth for *Acela* services was completed and provides rationale for the addition of two (2) business class cars to each existing trainset.

The original equipment is projected to be retired in the FY2025 - 2026 timeframe.

- A number of equipment has been returned to service. Funding provided under the 2009 ARRA program has allowed stored Amfleet I cars to be returned to service, providing much-needed capacity on the NEC. Additionally, 15 P-40 diesel locomotives and 20 Superliner cars have been refurbished and returned to service.

- Some adjustments have been made to delivery dates and sequencing of equipment replacement since the last version. These include:

    - Amfleet II replacement is now included in the single-level car replacement grouping along with the Amfleet I cars.

    - Increase in delivery rates and numbers for diesel locomotives

    - Adjustment of delivery programs based on current expectations on the acquisition process lead times

    - All dates are now referenced to fiscal rather than calendar years, to align with the other planning documents

6. Current Fleet Composition

Amtrak has not acquired any new equipment since 2002.

The entire fleet is generally quite old, which creates numerous financial, marketing, and operating challenges. The age profiles of the existing fleet are as follows:

Table 4: Amtrak Passenger Car Portfolio

Amtrak Passenger Car Fleet - Age

Equipment Type	Active Units 12/1/2011	Year Started in Service	Age in 2012	Average Mileage	
Amfleet I	473	1974 to 1977	35 - 38 Years	4,125,000	(a)
Cab Cars / NPCU	39	1969	43 Years	2,980,000	(b)
Horizon	95	1988 to 1990	22 - 24 Years	2,750,000	
Surfliner (c)	49	2000 to 2002	10 - 12 Years	1,580,000	
California Cars	78	1995 -1996	17 - 18 Years	1,875,000	
North Carolina Cars	12	1950s	60+ Years	675,000	(d)
Amfleet II	145	1980 to 1981	31 - 32 Years	5,640,000	
Heritage	99	1948 to 1956	56 - 64 Years	5,000,000	(e)
Viewliner / LDSL	51	1995 to 1996	16 - 17 Years	3,065,000	
Superliner (I & II)	428	1979 - 1996	16 - 33 Years	4,880,000	(f)
Auto Carrier	80	2005	7 Years	1,160,000	
Other (2 wheel cars / 2 track insp. / 1 training)	4	Unknown	Unknown	N/A	
Total	**1,553**				

(a) Average Amfleet I mileage lower than previous report due to the return to service of 55 cars formerly in storage for 5+ years

(b) Cab Car average mileage = 1,800,000 Mileage since inception of Amtrak data systems in 1970's; estimates not available for prior period

NPCU average mileage = 3,900,000

(c) Includes cars owned by Amtrak (39) and California (10)

(d) Mileage since last major overhaul, approximately 1995

(e) Mileage since inception of Amtrak data systems in 1970's; estimates not available for prior period

(f) Average Superliner I mileage = 5,995,000 and Superliner II average mileage = 3,410,000

Table 5: Amtrak Locomotive Portfolio

Locomotive Fleet Portfolio - Age

Equipment Type	Active Units 12/1/2011	Year Started in Service	Age in 2012	Average Mileage
P32	17	1991	21 Years	1,985,000
P32DM	17	1995 to 1998	14 - 17 Years	1,630,000
P40	15	1993	19 Years	2,035,000
P42	196	1996 to 2001	11 - 16 Years	2,250,000
F59PHI	21	1998	14 Years	1,580,000
AEM-7	47	1980 to 1988	24 - 32 Years	3,915,000
HHP-8	15	1999 to 2001	11 - 13 Years	1,095,000
Califonia Diesels *	17	1991 - 1994	18 - 21 Years	1,650,000
North Carolina Diesels *	6	1988 to 1998	14 - 24 Years	267,000
Switchers	45	1950 - 2010	2 - 62 Years	N/A
Total	**396**			

* Note: California and North Carolina diesel locomotives are **not** Amtrak owned.

Table 6: High Speed Trainsets Portfolio

Train Sets Portfolio - Age

Equipment Type	Active Sets 12/1/2011	Year Started in Service	Age in 2012	Average Mileage
Acela	20 *	1999 to 2000	12 - 13 Years	1,620,000
Northwest Service	5	1999	13 Years	1,920,000

* 20 sets = 40 power cars; 120 trailer cars plus one (1) non-revenue track geometry car

For an illustrated summary, Attachment 3 identifies the types of equipment in service. It should be noted that within each type, there are sub-types of car configuration to meet various service needs. These include coach and business class cars, sleepers, food service, etc. and reflect the different requirements of the routes on which they are operated.

The lack of consistent capital funding has been detrimental to development of the intercity passenger car supply market in this country. The periods of inactivity have likewise affected Amtrak's core capabilities to manage equipment acquisitions, as there is little continuity of experience.

7. Current Fleet Issues

Amtrak faces two (2) major fleet issues at present. These are:

1. Age Profile –

- The average age of the Amtrak fleet is just over 28 years. Several car types have exceeded their commercial life and are in need of replacement. Many more are approaching the point where they will require replacement. Because we intend to aggressively pursue new equipment procurement in more significant quantities, there will be a requirement to sustain aging equipment in service as the replacement process begins. Amtrak has the ability to achieve this by sustaining the current fleet during the transition and beyond to accommodate growth by selectively retaining the most serviceable equipment from the existing fleet.

Figure 10: Amfleet II Coach, primarily used on long distance services

2. Capacity –

- Amtrak's core services have seen significant ridership growth while the state supported services have also seen both substantial ridership growth and increases in service levels. In the short term, these needs have been met by returning stored and wreck/damaged equipment to service. Ridership on Amtrak's core services is expected to increase with current service patterns, and would grow even more with increased service.

- Growth in demand for service is already apparent. Consequently, we will need to expand capacity as we replace equipment. Whether this is addressed through a "cascade" mechanism or whether new equipment will be allocated to new or growth services is a decision to be made at the time, based on service demands, the equipment support and use considerations and the funding sources (and volumes) that are being utilized to deliver the services.

Figure 11: HHP-8 electric locomotive

- Reliability of the electric locomotive fleet remains a critical issue for NEC service. The three (3) types of locomotive in service (AEM-7 DC, AEM-7 AC and HHP-8) all have reliability issues. However, with the incoming delivery of the 70 new electric locomotives beginning in FY2013, a plan is now place to create

a single homogenous fleet of modern electric locomotives. This will displace the existing locomotives, including the HHP-8s which are relatively new. Various alternatives, including the retention of a reserve fleet, are under consideration.

8. Equipment Availability

Amtrak has made significant improvements in the availability of its fleet over the past five (5) years. This was accomplished with the significant infusion of stimulus capital used to return wrecked and out-of-service equipment to a ready and available status. Maintenance procedures - including overhauls fueled by stimulus and preventative maintenance - have been more consistently scheduled and executed to maintain the fleet's availability. These improvements have been accomplished despite a continually aging fleet.

For FY2009, Amtrak projected that 83.0% of its active car and locomotive fleet would be available for service at peak times, with the remainder of the fleet being shopped for preventative maintenance, repair or overhaul work. The actual fleet availability numbers were returned at an improved 86.7% for FY2009 with further increases shown in FY2010 to 87.9%, and with a percentage of fleet availability shown in FY2011 at 87.0%.

Projections for the fleet availability for FY2012 and beyond also reflect improvements and along with new and replacement equipment being installed, will increase the fleet availability to better than +89% over the next five (5) years through FY2016.

Table 7: Fleet Availability

	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Fleet Type	Actuals			Goal	Future Targets			
Cars	87.2%	88.5%	87.7%	89.0%	89.3%	89.5%	89.8%	90.0%
Diesel Locomotives	87.2%	87.8%	86.0%	87.0%	87.4%	87.5%	87.5%	87.6%
Electric Locomotives	75.7%	76.2%	76.2%	77.0%	77.3%	78.0%	78.7%	79.4%
Total Fleet	86.7%	87.9%	87.0%	88.3%	88.5%	88.8%	89.0%	89.2%

Attachment 1 is the table which depicts the full fleet equipment availability counts projected for FY2012 – FY2017.

Operational Definitions for Attachment 1 (Fleet Counts and Availability FY2012 – FY2017) are as follows:

Amtrak Pool - All units currently in passenger service (on trains, in protection pool, in shop) owned, leased or in the control and use determination of Amtrak.

Active - All units available and deemed able to be placed in passenger service

Planned Shop - Projected units scheduled for preventive maintenance plus a projected percentage of bad order and repair units. Projected bad order and projected repairs are based on historical equipment maintenance data.

Planned Availability - Active fleet minus Planned Shop. Projected real-world availability.

9. Commercial and Useful Life of Equipment

When determining the "lifing" policy for equipment, there are two (2) main criteria to be defined. The first is *Useful Life* and the second is *Commercial Life*. Useful Life is a generic and somewhat arbitrary age-based definition of 30 years for locomotives and 40 years for passenger cars. It does not take account of condition of the equipment or investments to extend its life. Amtrak reports on the percentage of its equipment that is beyond its useful life as part of State of Good Repair (SOGR).

Commercial Life is a combination of a number of factors. The main elements are as follows:

- Maintainability – equipment condition; ability to support equipment components, based on obsolescence, cost in manpower, support infrastructure and parts consumption necessary to maintain the equipment; the reliability experienced in service with associated impact on service delivery.
- Availability – number of cars and locomotives available to support demand requirements.
- Technical capability – ability to meet the requirements of the service.
- Customer acceptance – the willingness of customers to pay to ride the equipment and the impact on ridership or revenue that can be achieved by changing equipment types.
- Capital availability – capability of the organization to fund the capital investment required to provide replacement equipment

The combination of these factors will result in a proposed commercial life for equipment. This is usually a shorter term than the useful life. Discussions within Amtrak have resulted in the following proposed commercial equipment lives:

- Single Level Coaches – 30 years
- Bi-Level Coaches – 30 years
- Tier I Trainsets – 25 years
- Tier II Trainsets – 20 years
- Electric Locomotives – 25 years
- Diesel Locomotives – 20 years

The purpose of defining commercial life is to provide a basis for equipment planning decisions. Equipment will not be automatically replaced when it reaches the end of its commercial life. The choice of time to replace equipment will be dependent on the condition of the equipment and its performance against requirements at the time. Poorly performing equipment may be withdrawn before the end of its commercial life. Other equipment may be used beyond commercial life, if its inherent capabilities justify, or if other constraints limit procurement options. From a strategic perspective, the commercial life allows the organization to define a long term strategy for equipment replacement and the consequences of investment in equipment for the business as a whole.

Amtrak plans to introduce new equipment at both a higher volume and in a more compressed time frame than has been previously outlined. With changes in manufacturing demand for rail equipment, the overall downturn in the economy, a faster pace of acquisition is now recommended in order to increase the number of units manufactured each year.

We will therefore have to accept that a significant quantity of equipment will continue to be operated beyond its commercial life during the transition through the timing of replacement. This is an acceptable transitional situation for the following reasons:

- The condition of the fleet is relatively good
- The maintenance and spares capabilities remain in place to allow ongoing operation
- The most pressing replacement requirements are already being addressed
- A carefully planned and managed progressive replacement program is now in place

The previous version of this strategy prompted debate about the equipment lifing policy. It was suggested that the approach was too aggressive in determining a value for equipment life that some felt was too short. In order to address this point, modeling was undertaken of the life cycle costs of equipment maintenance. This was based on a gradual escalation of running maintenance costs as the equipment ages, combined with periodic investments to keep it attractive and in good running order. Also included were equipment depreciation costs and replacement opportunities.

We concluded that a life of 25 - 30 years for a passenger car was justified, based on the maintenance regime alone. The point has been made that a stainless steel body shell can last almost indefinitely. While this is true, it does not address the major life cycle cost drivers (the systems fitted to the train and the fixtures and fittings) none of which are as long lived as the shell.

Additional work was undertaken to estimate the impact on the life cycle of revenue impacts from new equipment. Our research showed that life cycle cost was adjusted to reflect additional revenue new equipment could bring to the operation by virtue of both pricing improvements and ridership gains. These changes were significantly more important than the gradual escalation in maintenance costs from aging.

The life of equipment might well be brought into the 15 - 20 year range when accounting for the revenue benefits. This is for the standard corridor type of service; for higher revenue service, the benefits may even be greater. From this work, we concluded that the lifing policy assumptions in this strategy are conservative. We do not propose at this stage to adjust those requirements. However, this topic will be continually reviewed.

10. Demand Profile for New Equipment

In the following chapters, we identify the various factors that influence the fleet needs. These include current fleet composition, demand for service, fleet issues and equipment replacement policies. To develop a demand requirement for new equipment, we assess all of these issues. This assessment is then combined with projections of equipment costs and retirement profiles for the existing fleet to come up with an overall equipment and funding demand profile.

Attachment 2 of this report provides a summary of the planned equipment acquisitions. This attachment depicts the equipment type and planned fiscal year of acquisition for the equipment.

The important points to note from this analysis are:

- The electric locomotive acquisition previously identified as vital is now underway.
- Expansion of the strong revenue producing *Acela* service is a priority.
- A demand of approximately 100 cars per year for single level cars for the period FY2016 through FY2022
- A demand of approximately 100 cars per year for bi-level cars beginning in FY2018 through FY2022
- The need to commence acquisition of diesel and switcher locomotives

The average year-to-year costs of such a program will be significant. Financial projections including pricing assumptions are noted in the "Government Audience Only" appendix as a subset of the Fleet Strategy.

11. Acquisition of Equipment by Amtrak's State Partners

Amtrak has collaborative partnerships to provide intercity passenger rail service with 15 states including: California, Washington, Oregon, New York, North Carolina, Michigan, Oklahoma, Texas, Vermont, Maine, Virginia, Illinois, Pennsylvania, Missouri and Wisconsin.

With new sources of Federal funding becoming available to states since the enactment of the Passenger Rail Investment and Improvement Act of 2009 and with the planned expansion of several state-supported services, many of our state partners have begun to acquire their own equipment and utilize Amtrak to provide the transportation, support and logistics necessary to operate this equipment.

As discussed in earlier versions of this Fleet Strategy, Amtrak is committed to providing the fleet capacity necessary to support current service levels and to accommodate the assumed 2% growth rate at a state's request, consistent with the funding requirements of the anticipated PRIIA Section 209 cost-sharing methodology. However, some states presently own their own equipment used in these services and additional states may wish to procure their own equipment in the future to meet such service levels and have Amtrak operate this equipment. Since the fleet strategy for each such state-supported route is not yet known and requires on-going discussions between Amtrak and each partner state, this strategy only reflects the current fleet sizes and the planned replacement equipment. Fleet units in service to states are excluded from this report until further discussions with the states can better guide us on their future plans for the fleet equipment in their corridors.

The following table depicts fleet units owned by state partners that have been removed from the unit counts in this edition of the Fleet Strategy:

Table 8: State Owned Equipment

STATE OWNED EQUIPMENT IN AMTRAK SERVICE	CA	NC	OR	WA
EQUIPMENT TYPE:				
Single Level Coaches	-	14	-	-
Bi-Level Coaches	88	-	-	-
Non-Powered Control Units (NPCU)	-	-	3	
Locomotives	17	6	-	-
Northwest Equipment	-	-	-	37
	.			
TOTAL	**105**	**20**	**3**	**37**

12. Funding of Fleet Acquisition

Several financing options are available and under consideration to fund equipment acquisition. Dedicated and reliable funding sources will be essential if the recapitalization program is to be pursued. Without funding, Amtrak cannot commit to long term investment limiting the supplier interest in the commitments and investment necessary for the development of the intercity passenger rail market.

The main funding alternatives presently under consideration are:

- Direct Federal appropriations to Amtrak;
- Appropriations or other funding to another entity, as presently under consideration by Amtrak and State Transportation Departments, consistent with the statutory language of PRIIA Section 305;
- Federal loan programs, to be paid back by Amtrak out of annual appropriations or out of additional revenues generated by the new fleet.

Amtrak cannot enter into any transaction that adds new debt without the approval of the Secretary of Transportation. As Amtrak explores financing options, the investigation will be carried out in close consultation with the Department of Transportation. Given the scale of its capital needs, Amtrak will not be able to fully meet its capital costs from operating revenues and Federal investment will be required. This investment will have to occur either up front or take the form of debt service payments.

An analysis of the funding needs for the equipment purchases through FY2042 has been undertaken to compare cash flows for the alternative options of: (i) outright capital grants; (ii) use of federal loan programs; and, (iii) private capital financing. Figure 7 illustrates the comparative cash outflows for these three (3) options for funding the fleet recapitalization program.

Amtrak continues to review the process of analyzing these alternatives and discuss them with our state and Federal partners.

Amtrak has been very successful in recent years in utilizing contractual “early buy out” options to terminate some expensive lease financings. The terms of these lease buy-outs have provided very significant savings. There is nevertheless still a significant amount of existing rolling stock that is subject to lease financing and the timing of equipment replacement must take these obligations into account. There are various contractual options under these leases, which allow us to use equipment to the end of the applicable lease term before returning it to the lessor. There are renewal and lease-

end purchase options, as well as, in many cases, the aforementioned early buy out options.

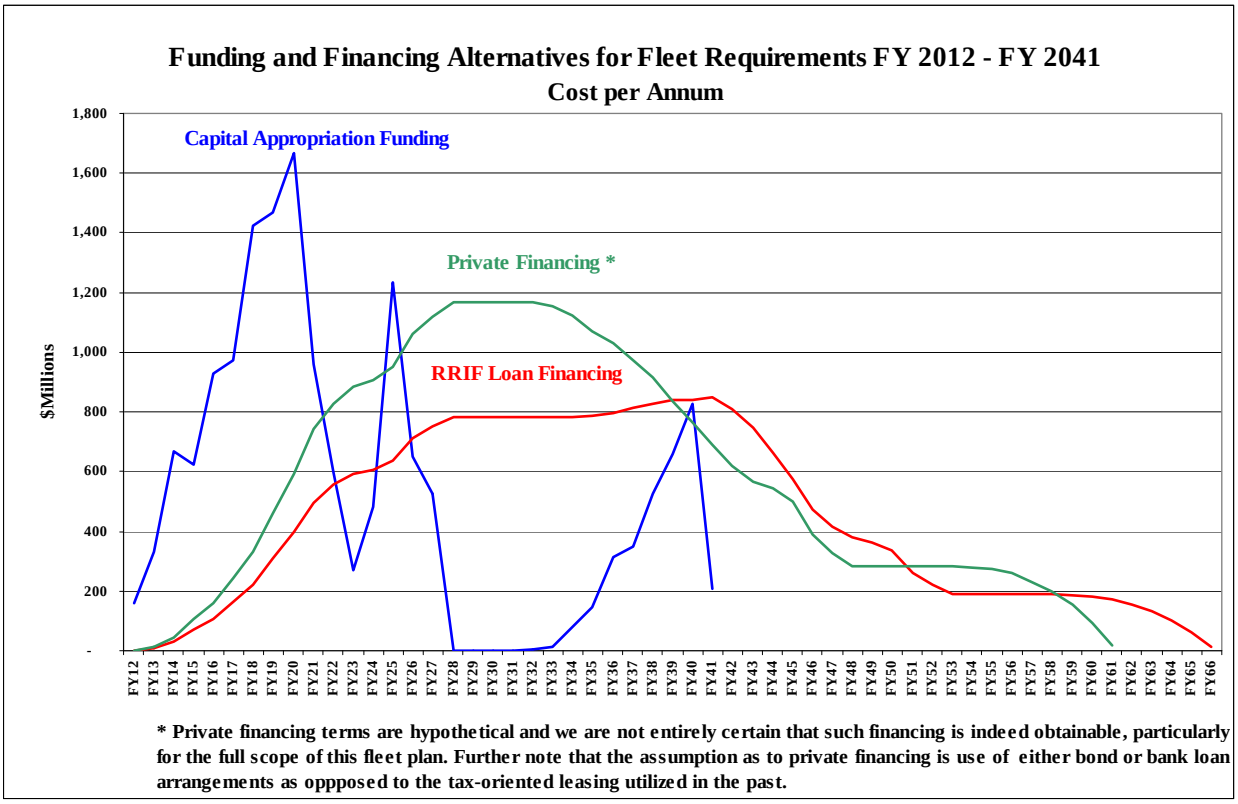


Figure 12: Funding Needs and Alternatives

In some cases, the terms of given leases are not perfectly aligned with the out-of-service dates Amtrak would plan if such lease financing contracts did not exist. When the planned out-of-service date is beyond the lease expiration date, the situation can be approached in several different ways. For example, Amtrak may be able to exercise lease renewal options of limited duration to retain usage of the equipment after the lease expires. On the other hand, if the desired out-of-service date falls before the end of Amtrak's contractual lease obligations, an analysis of all alternatives will need to be conducted to determine the best course of action. It may be that it will be necessary to run leased equipment, or to utilize the equipment in a reserve role, until a later out-of-service date.

13. Current Programs

Acquisition programs are currently underway and several other programs are in the developmental stage. Active programs include the Long Distance Single Level (LDSL) car acquisition, the acquisition of new electric locomotives, the procurement of additional cars for the *Acela* services, partnering with third parties to develop new equipment specifications and types, a progressive approach to the replacement of switcher locomotives, as well as new program management resources and processes:

1. The LDSL project is for a base order of 130 cars.

    - A portion of these will replace the Heritage cars which predate Amtrak and are difficult to maintain. These are the oldest cars in the fleet, and their ranks include all of Amtrak's baggage and single level dining cars.

    - Some new LDSL cars will be a combination baggage and dormitory car, which will free up sleeping capacity for additional revenue passengers.

    - Additional sleeping cars will make up the balance of the order.

Figure 13: Heritage dining car – slated for replacement

2. The electric locomotive acquisition is for 70 engines.

    - These will replace all of the existing electric locomotives on the NEC. This should provide a significant improvement in reliability for the electric locomotive fleet, as well as capacity for future service expansion.

    - Alternative uses for the HHP-8 locomotives remain under review and their ultimate disposal will be addressed at a later time.

    - A reserve fleet will be required as the new locomotives enter service and the HHP-8 fleet should be suitable for this work, as their leases will run for a few years after the arrival of the new locomotives.

3. Add 40 cars to the *Acela* services.

    - To increase seat capacity by adding 130 seats per trainset.

    - Minor specification changes are planned to allow access for passengers at low level platforms.

4. Specification development work is underway for other equipment types. Much of this work has been in concert with the Next Generation Equipment Committee (NGEC) as discussed in Section 15. Equipment types include single level corridor cars, multi-level corridor cars and high speed diesel locomotives for passenger service.

5. Amtrak is undertaking a progressive approach to switcher fleet replacement.

   - The new switchers will replace traditional locomotive designs with genset technology. Gensets use two or three 700 hp diesel engines that meet Tier 4 US EPA truck emission standards, which are stricter than locomotive emission standards. New switchers will use about 60 percent less fuel, with a corresponding emissions reduction. The emissions reductions will allow Amtrak to take advantage of diesel emission reduction grant programs in partnership with state and local agencies in the places where the switchers are operated.

   - Two (2) new switchers have already been introduced in California – one in Oakland and one in Los Angeles.

   - Two (2) more genset switchers are planned for introduction in Chicago.

   - In cooperation with the Brotherhood of Locomotive Engineers and Trainmen (BLET), we have applied for a grant to update two (2) switchers in Washington, DC. These two (2) switchers will be rebuilt to take a new genset configuration. This rebuild will extend the service life, altering the replacement plan considerably.

6. Program Planning and Management

   Newly defined roles, processes and more stringent oversight are now utilized to plan, track and support all rolling stock acquisitions.

   - The role of Principal Officer, Strategic Fleet Planning is to lead, develop and continually analyze the global fleet strategy of the company including the integration with financial plans, resources and demand needs and to coordinate all fleet acquisition, replacement and retirement plans with the Amtrak Strategic Plan.

   - The role of the Project Team Leader is more tactical in nature, reports to mechanical department management and is assigned to each acquisition project as the oversight of all aspects of each project.

   - Defined processes and cross-functional Project Management Teams are formed following the identification and justification of new equipment acquisitions including representatives of:

- NEC IID
- Rolling Stock Engineering
- Facilities Engineering
- Labor
- Procurement
- Mechanical
- Transportation
- Marketing
- Quality
- Finance
- Legal

14. Growth Modeling Cases

A number of possible scenarios have been put together to model Amtrak's ridership in coming years. These scenarios are subject to revision based on the development of service planned and will be updated as circumstances change. The analysis covers Amtrak's three (3) major rail business lines:

- Northeast Corridor Service
- Long Distance Service
- State Supported Corridor Service

Figure 14: P42 Diesel locomotive

Control over the scope and development of the first two (2) business lines lies largely with Amtrak. The NEC vision is currently under development and will be available approximately May 2012. The third is entirely dependent on the courses individual states wish to pursue. The PRIIA and ARRA mandated approaches will guide service development, and Amtrak will work with states that wish to fund service development. Amtrak can therefore make only a general overall assessment of the requirements of new services, on the basis of some rough estimates about the likelihood and scope of future developments. The purpose of this analysis is not in any case to make broad predictions about the future of passenger rail, but to come to some general conclusions about the approximate level of equipment future services will require. These conclusions can then be factored into our strategy.

Excluding the decision to add cars to the existing *Acela* service, the first level of analysis undertaken was based on a prediction of 2% secular growth across the fleet. The results of this analysis are included in the core planning contained in Section 3. Ongoing work to refine the growth models is unlikely to result in a significant change in the equipment requirements in the short to medium term, given the backlog of need based on the age of the current fleet.

Additional comments on the NEC analysis to be included in the NEC Vision due in May 2012.

15. Projected Fleet Acquisition

In planning for the new equipment to be introduced in the coming years, the equipment types have been categorized into broad definitions, i.e. single level passenger car, bi-level passenger car, etc. We have noted the need for sub-types in the assumptions discussion.

Attachment 2 is the table of proposed acquisition activity for the next 30 years excluding the state corridor equipment. This strategy is based on the existing active fleet and the modeling of growth on top of that fleet. We have modeled baseline growth on the existing route structure. The baseline does not include additional frequencies on existing routes or new routes. The requirements for equipment for such changes will be incremental to this strategy but given the magnitude of Amtrak's baseline requirements, such incremental additions will be manageable. As we have noted, if additional service frequencies and/or route expansions are made a part of the expansion in ridership, locomotive requirements will rise significantly.

A cross-functional group agreed to consider future orders with a single specification car to replace the Amfleet I & II cars, the Viewliner cars and the remaining Heritage baggage cars for a total of 825 units. In order to expedite in-servicing and replacement and to generate adequate supplier interest, an order of 100 cars per year should be developed and placed. Delivery is planned for FY2016 through FY2022.

- Implementation of a program to acquire 508 bi-level cars to replace the existing Surfliner, Superliner and Parlor car fleets. We have planned to develop this order at 100 cars per year with delivery beginning in FY2018 through FY2022.

- Acquisition of additional switching locomotives to those currently being rebuilt to improve the environmental efficiency and cost of operation of the switching fleet. This will consolidate the switching fleet and will allow the management of a fleet of locomotives to support infrastructure work trains separately from the switching operations. The order for the switching units will be consolidated along with the replacement diesel locomotives.

Figure 15: F59 and P-328 diesel locomotives

The individual acquisition programs that will take place throughout the time period under consideration will determine the details of the individual car types (e.g., coach, sleeper, diner, etc) required. This will be a combination of equipment needs, the anticipated customer environment and operating model and planned technological

advances. These decisions will be important, but they are obviously complex, and the details of sub-types and numbers are outside the scope of this report.

While we do not discuss the specifics of individual car types, the alignment of procurements to the overall business strategy is very important, and close attention must be paid to ensure that each equipment procurement is well matched to service demands. For example, the majority of the Amfleet I cars are used in NEC service. However, some operate in state corridors. Those cars in use elsewhere may be replaced under a program focused on the needs of that type of service.

Figure 16: Horizon single level car as used in some corridor services

Amtrak's passenger fleet serves a wide range of requirements and operating environments. The individual configurations will result in a variation in per-unit equipment cost. This will be reflected in the specification and budgeting for the individual programs. From a strategic perspective, the pricing assumptions have been based on the average price of cars across the whole fleet.

As one of the topics addressed by this report, consideration has also been given to the potential benefits of transitioning certain corridor services from single level to multi-level cars. For those corridors where infrastructure constraints are not an issue, the potential for providing more cost-efficient capacity with multi-level corridor cars was recognized. This could permit replacement of current equipment, shifting of less desirable equipment to other services (weather constraints in some regions make this a desirable course of action) and retirement of the oldest equipment. These studies and discussions with our partners are on-going.

The work of the Next Generation Equipment Committee (NGEC), (PRIIA Section 305) is presenting an interesting procurement opportunity. The NGEC has developed a specification for a bi-level corridor car similar to the type currently in service in California. That state has a current requirement for new equipment to expand services ("California order"). By transitioning other state service to this type of equipment, a number of the single level cars in the former base plan would no longer be required. Further, through the conversion to bi-level equipment, state services currently using single level cars would benefit from a higher level of passenger seating capacity, since 125 bi-level cars could do the work of approximately 155 single level cars required for Midwest services. This will have immediate life cycle, operational, and economic benefits as shopping and parts requirements would be reduced correspondingly.

The potential base order of approximately 125 cars specified above could be introduced in services from Chicago to Pontiac, Port Huron, Grand Rapids, St. Louis,

Kansas City, Quincy, and Carbondale. This would transition all of the short haul service from the Chicago hub, save for Amtrak's state-supported *Hiawatha* service between Chicago and Milwaukee, which will be transitioning to the new Talgo equipment acquired by the State of Wisconsin. The only other exception would be Amtrak's *Hoosier State/Cardinal* Service between Chicago and Indianapolis, which would continue to use single level equipment because of clearance constraints on the *Cardinal* route. In addition, subject to state concurrence, it might also be possible to transition Amtrak's state-supported *Heartland Flyer* service between Oklahoma City and Fort Worth to the new bi-level corridor equipment, which would be more suitable than the Superliner long distance coaches currently used.

In addition to the benefits noted above, there are additional incremental gains associated with the California order. As the cars are delivered, Superliner cars currently used in California corridor services can be returned to revenue service, providing additional capacity for growing long distance services. Furthermore, the single level cars released as a result of the transition to bi-level equipment are not yet scheduled for retirement and will provide additional capacity for existing and expanded single level services and potential service expansions. Finally, this procurement would allow for an earlier introduction of new equipment to those corridors than would be possible were the equipment to be replaced via Amtrak's single level acquisition program.

Based on this activity, it is anticipated that the states of California and several Midwestern states (led by Illinois) will issue a RFP in the spring of 2012. The requirements to support a bi-level fleet in the Midwest – including infrastructure, a fleet management plan and maintenance – will need to be determined in conjunction with the state services. Amtrak will play a major role in assisting the FRA in determining the future needs and funding requirements.

All of the above potential changes would, of course, be implemented only in partnership with, and subject to, full concurrence in such changes by those states whose services would be impacted. Over the coming months, Amtrak will continue discussions with these state partners to further explore this option and determine the appropriateness of pursuing this strategy and subsequently update this strategy as necessary.

16. *Acela* and High Speed Train Sets

Given the revenue generated by the *Acela* program, options for service development must enjoy high priority. The operating environment on the NEC puts significant constraints on the possibilities for service expansion and the revenue depends on the customer perception that *Acela* offers significantly better benefits than the *Northeast Regional* service.

Growth modeled for *Acela* indicates that there is a need for additional capacity. However, the age of the present equipment makes any decisions about capacity growth in the short term more difficult to conclude.

The *Acela* fleet presently consists of 20 trainsets, each of which has two (2) electric power cars and six (6) trailer cars. Of these 20 sets, 16 are presently used in daily service, leaving four (4) sets to be in planned maintenance or overhaul at any one time. The cars are all Tier II compliant, and can only be used in stations with high level platforms in territory with overhead electrification.

Figure 17: Acela trainset entering Washington Union Station

Modeling of the potential *Acela* ridership across the Northeast Corridor shows the following trends on passenger miles and ridership:

Table 9: Acela Ridership & Passenger Mile Projections

Year	Ridership	Passenger Miles
FY11	3.379	642.29
FY18	3.816	726.63
FY23	4.119	784.41
FY30	4.564	869.45

* millions

The above updated table includes increases of one (1) additional *Acela* route north of New York. We have not assumed further changes in the *Acela* frequencies pending an update to the NEC Master Plan, anticipated in May 2012.

With the current fleet planned for replacement approximately FY2025 – FY2026, it is clear that the *Acela* will have to accommodate a significant growth in demand before the new fleet enters service.

The current plan is to acquire 40 additional coaches to augment the existing trainsets, (two (2) cars per trainset). The plan is to in-service these 40 additional cars during FY2015.

Analysis of the business case for adding additional cars to the existing trainsets has concluded that there is a compelling case for an additional two (2) cars for each set. Given the level of projected ridership growth and the capacity constraints already experienced (which translate into lost revenues), addition of two (2) cars per set will deliver a positive return even with the anticipated retirement of the trainsets in FY 2025 - FY2026.

A project team has been established to define the specification for the new cars and negotiate their supply. In addition to modifying trainset length, the project will also address the configuration of the maintenance facilities which must be resized to accommodate these longer trains. These modifications will provide additional capacity for longer trainsets if they are purchased as the next generation of equipment.

Beyond this initial capacity boost, development work is underway on a significant increase in capacity to support more frequent *Acela* and subsequent service. This would potentially require an additional 10 trainsets of a new, rather than existing design with delivery beginning in FY2020. Additional equipment purchases to this design would begin in FY2025 to replace the original equipment, based on projected commercial life and the expiration of the current lease financing agreement. This would create a uniform high speed fleet.

The initial planning work for the next generation of high speed equipment is already underway. It will address opportunities in technology and infrastructure constraints as Amtrak considers options for removing existing capacity bottlenecks and alignment constraints while also increasing the top speed of the train itself. Amtrak's long term vision for the implementation of high speed service on the NEC will ultimately involve new right of way, dedicated operations and equipment suited to the operating regime associated with speeds of up to 220mph. While the long term plans for high speed service on the NEC include significant infrastructure upgrades that come with significant capital cost and long lead time, the next generation of high speed equipment will be designed to provide an equivalent of today's *Acela* service until such time as those upgrades can be implemented and these new trainsets can be utilized at their full performance capacity.

The specifications for the next generation will therefore be constrained by infrastructure limitations. Amtrak is looking at the potential to increase the speed in areas where infrastructure issues currently limit it. These updates will not, however, necessarily provide the desired gains. In designing a train for high speed service there will be compromises in the design between the requirements for high speed operation and curving performance.

These conflicting needs mean the ultimate solution will require an analysis of the total trip performance. Improving curving speeds may actually have a greater benefit on journey time than ultimate top speed of the train. Only with this analysis fully modeled and understood can the specification for the train itself be finalized. This work will be a major part of the project team as they combine the various requirements of the future services.

The *Acela* fleet has taught Amtrak a great deal about the operation and maintenance of high speed rail equipment in the North American railroad environment. Amtrak's Reliability Centered Maintenance Program has brought many of these benefits to the high speed rail program and will influence the approach to maintenance of any new equipment. The restrictions of operating to FRA Tier II equipment safety regulations have also highlighted some elements that can be enhanced for the next generation of equipment, and Amtrak will engage with the FRA to determine how the regulations might evolve to provide a better product and more efficient operations without negatively affecting safe operation.

Over and above the expansion and replacement of the current *Acela* fleet, Amtrak has a long term vision for the implementation of a very high speed service on the NEC that will involve new right of way, dedicated operations and equipment suited to the operating regime associated with speeds of up to 220mph. This equipment will be defined as plans for creating the right of way and the operating model are developed. Equipment will be needed, but it is not yet sufficiently defined to be included in the projected equipment acquisitions.

An in-depth study of the total *Acela* program and services on the NEC is currently being conducted by a third-party consulting firm with an expected output in May 2012.

17. Disposition of Retired Equipment

When Amtrak retires equipment from service, our options are to store, sell or scrap the equipment. Amtrak has concluded that the best course of action at this time is to hold most retired equipment in reserve and re-evaluate the unit or the impacted fleet on a periodic basis. On occasion Amtrak may sell retired units to museums or private operators of individual cars or other railroad operators; however each request is reviewed and approved by Executive Management before a sale is consummated.

Table 10: Projected Retirement Dates by Fleet Type

Car Type	Number in Service	Retirement Period	Age of Oldest Vehicle at Retirement
Heritage	9	2012-2014	64
Metroliner Cab	17	2018-2028	59
Amfleet I	444	2018-2028	51
Amfleet II	145	2015-2018	35
Horizon	97	2028-2030	40
Viewliner	50	2030-2031	34
High Levels	5	2017	58
Superliner I	247	2018-2029	47
Superliner II	181	2029-2038	41
Surfliner	39	2038-2040	38

A key element of Amtrak's overall intercity passenger rail strategy is to sustain and develop the supplier base for intercity passenger rail equipment in the United States. Providing a substantial amount of aged equipment to third parties at low cost could undermine that strategy. If states are interested in acquiring equipment to enhance existing service or initiate new service, Amtrak is willing to work with those parties to achieve their goals using existing or new equipment, in accordance with Amtrak's overall fleet strategy.

In addition, the sale of equipment that has already reached the end of its useful life would likely cause maintenance issues for the operator of such equipment. Should Amtrak be the contract operator of that equipment, Amtrak would inherit the maintenance issues that we were seeking to avoid when we initially chose to retire the equipment.

Lastly, from a cash return perspective, it may be more advantageous for Amtrak to sell retired equipment versus the value we receive when scrapping equipment (the one exception being wrecked units).

It is for these reasons Amtrak has decided to store retired equipment and entertain the sale of equipment on a case-by-case basis.

18. Limitations on Fleet Growth Possibilities

Demand forecasting indicates the likelihood of substantial growth in both the NEC and in state corridors, with a more modest growth in the long distance network. In order to realize the secular growth of two (2) percent per year and the promise of greater growth in developing corridors, additional service(s), modifications to existing services and/or a combination of both will be necessary. It is, however, important to note that there are substantial obstacles and limiting factors to be overcome if growth is going to be accommodated in some corridors.

Within existing service levels, there are a variety of methods that could be used to meet secular growth projections. Those routes that are operating at a relatively low peak load factor can accommodate some growth with the existing equipment. In other instances, it may be appropriate to add cars to existing trains to increase carrying capacity. It may also be necessary to manage demand through aggressive pricing and marketing strategies to drive demand to off-peak ridership periods. Finally, different types of equipment with higher capacities (i.e. multi-level) may need to be considered where operationally feasible. Such methods of increasing carrying capacity may prove difficult to implement.

Examples of limitations on existing service modifications include station facilities in the NEC and Cascades services. There are limited slots available on the NEC for additional service capacity and the lengthening of existing trains will ultimately be constrained by either station lengths or the ability to provide head end power (HEP) to additional cars. New locomotives on order have enhanced HEP capacity.

King Street Station in Seattle is another example. Here, the physical configuration of station tracks, ingress and egress to the station, and coordination of commuter train, Amtrak Cascades regional trains and long distance trains must be carefully choreographed to allow differing types of trains to simultaneously use a facility that has severe space constraints. Likewise, Pacific Central Station in Vancouver, BC can only accommodate trains of a certain maximum length in the “sterile” area where trains are held for customs and security reasons.

Impacts and changes to operational practices, including competitive travel times, scheduling and equipment allocation, equipment availability, the ability to maintain longer consists and provide adequate locomotive power must be considered. Scope for future growth must be included in ongoing and planned locomotive acquisitions. Stations, facilities and related infrastructure may require substantial investment and modification to accommodate secular growth – above and beyond fleet needs. Each corridor’s particular features, needs and growth expectations need to be carefully weighed and trade-offs made to meet anticipated demand growth.

Ultimately, substantial growth will require additional service frequencies and the additional infrastructure that may be necessary to provide adequate capacity in the system. In the case of developing state corridors, intensive negotiations are underway with host freight railroads to prepare for this growth. In most cases, the ability to grow services in a timely manner will be dependent upon a federal investment partnership. Without a strong federal/state partnership to develop corridors, growth in new services will be hard to attain.

Capacity at maintenance facilities and storage locations will also have to be considered. Existing facilities are often geographically constrained and have limited scope for expansion. The growth of commuter services can also stress these facilities. New locations may be required either for existing routes or for new services. Finding locations that are efficient from an operating perspective is difficult but necessary if we are to avoid unnecessary additional movements to reach inconvenient locations.

As customer use increases, parking for customer vehicles also becomes an issue. Adequate parking facilities and space must be considered along with our intended ridership growth.

A final key constraint on the development of new routes or the increase in frequency of service in existing corridors is the availability of funds to support operations. The capital investment in new equipment and facilities to grow services is only justified if there is sufficient additional operating funding available to sustain those services.

19. Accelerated Development of True High Speed Service

At present, there is considerable discussion about the introduction of "true" high speed service in the US. PRIIA defines "high speed rail" in the U.S. as services operating at 110mph and above. The current top American speed of 150mph is achieved only by the *Acela* service. For our purposes, "true" high speed services go well beyond this threshold, up to 220mph.

True high speed projects are under consideration by a number of states. Proposed technical solutions have included the importing of technologies from foreign manufacturers that already operate such high speed services. Such equipment is, however, not compliant with current FRA safety regulations and new regulations for such purposes that would cover services up to 220mph are presently under development by the FRA, which may generate acceptable operating methodologies or other strategies for such equipment to be used on the existing infrastructure.

In Section 16, the need for the replacement of the existing *Acela* fleet was discussed. Amtrak has announced a proposal for investment in the NEC with the ultimate goal of achieving high speeds enabling a two (2) hour trip time between Washington DC and New York. A substantial part of the total program cost will be infrastructure upgrades to address bottlenecks and speed-restricted segments. However, improved train performance will also be a component of the longer term vision for operations at higher speeds.

20. Single Level Cars on the NEC

The previous issues of this report included the general assumption that single level cars would replace single level cars and bi-level cars would replace bi-level cars. A notable potential exception to that was made for Midwest corridor services, where a transition to bi-level cars was identified as a potentially beneficial step which needed further analysis. That analysis is reflected in this updated issue of the report.

Beyond the Midwest services, the report prompted some debate about the possibility of moving away from single level cars entirely, and adopting bi-level cars for all new acquisitions. For the east coast services with restricted clearances that cannot accommodate Superliner or Surfliner equipment, a different configuration of car would be needed.

This issue has been addressed by commuter operators and the recent New Jersey Transit (NJT) of the Bombardier Multilevel car is a prominent example. This car can board from high and low level platforms and has upper and lower seating levels as well as a mid level at the end of the cars.

Amtrak has previously reviewed this type of equipment for potential use in the NEC. That analysis found that the configuration allowed little additional seating for an Amtrak style of service. Additionally, through train access issues would be problematic. Further work is, however, underway and Amtrak will study the results to see if the initial concerns have been overcome and a suitable configuration for our customers can be developed. These studies continue and will be reflected in future updates.

21. Deployment of Trainsets Versus Conventional Car-Based Consists

Today, two (2) Amtrak services use trainsets instead of consists of standalone coaches and a third will soon enter service. The first two are the *Acela* services on the NEC and the *Cascades* services in the Pacific Northwest. The third (now with a revised in-service date target of fall 2012) will be the *Hiawatha* service in Wisconsin and Illinois. Elsewhere in the network, all train consists are built up from individual coaches on an as-needed basis.

There are benefits and downsides to both types of operation. Worldwide, there has been a shift towards operation of trainsets. Further analysis is required to determine whether there are additional parts of the Amtrak system that would benefit from a further introduction of trainsets and this is not addressed in this report.

From the point of view of this strategy, the possible adoption of a greater use of trainsets would have a relatively modest impact on the overall approach characterized in this report. Fleet requirements are based on seat need. Trainsets are believed to be broadly competitive with car-based consists on a cost per seat basis and therefore the funding profiles proposed for car-based consists should still be generally relevant in the case of a change in philosophy regarding consist type. The issue of maintenance facility requirements is a larger issue and would have to be part of the work undertaken when looking at the merits of trainsets, since their introduction would require significant investment in maintenance facilities.

22. Diesel Multiple Units

The possibilities of Diesel Multiple Units (DMUs) have been much discussed in recent years. The Budd-built Rail Diesel Cars (RDC) continue to provide service in some locations in North America, but have largely been withdrawn from service. However, perceptions of their capabilities and limitations continue to influence the discussion of DMU utility.

Modern DMU designs are significantly advanced from the RDC and they are in service around the world in both short and long distance routes at moderate and relatively high speeds. There is no inherent limitation of the DMU concept with regard to the type of service where it may be utilized.

DMUs can provide higher frequency service without having excess capacity. Studies have been undertaken as to the largest DMU consist that can be operated before a locomotive and coach consist becomes more efficient. The received wisdom is that the break point is approximately four (4) cars. This number is, of course, highly dependent on factors such as route structure, frequency, demand and seating capacity.

Given these caveats, it still appears a good case could be made for using DMUs on routes that have lower ridership density or as a development tool to build ridership before substituting a larger train when demand warrants it.

At present, there is no active builder of DMUs that comply with FRA crashworthiness requirements. Colorado Railcar did produce a compliant DMU concept in both single and bi-level configurations, but that company has ceased operations. Their designs have been obtained by US Railcar but no orders have yet been received.

Non-compliant DMUs have also been delivered for the US commuter market by both Siemens and Stadtler. Temporal separation from freight services is used to limit the potential for collisions. This is not a practical solution for wide-ranging use of DMUs on the national or state corridor networks.

Potential compliant DMUs are being considered by manufacturers and there are programs that could develop the concept for the commuter market. Those projects that have identified DMUs as a solution still have significant hurdles to overcome.

Given that, it is not unreasonable to conclude that if a requirement exists for a DMU product for the intercity market, there is nothing presently available and little on the horizon on which to base any planning. Therefore, Amtrak can either take the leadership on developing a DMU requirement to take to the supplier base, or it can wait

to see what comes from the commuter market, to see whether it can be adapted; it could also drop the concept from further consideration.

If Amtrak is to take the leadership on a DMU concept, there must be a sufficiently large equipment requirement to justify a new product development launch. Manufacturers would probably want an order in excess of 100 cars to allow the non-recurring costs to be amortized. They are unlikely to engage in a smaller order.

Maintenance support of the DMU must be a factor in considering its utilization. Modularity is a key feature of the design, and it will influence maintenance processes and costs. This may require a revision of maintenance practices, but it can be undertaken in a relatively small facility. As DMUs are considered locomotives under FRA rules, they must undergo more frequent inspections than coaches.

Based on the interest being shown both within Amtrak and the states at this point, there does not appear to be a clear cut case for Amtrak to take the initiative on a DMU product. The concept does not appear to be a good fit for the existing network and operating model. New state services might be the best chance, but few states seem to be interested. If acquisition went ahead, it would be for a relatively small overall fleet size which would mean that, without other outlets for the product, it would not be a sustained build line, limiting supplier interest.

The only thing that is likely to change the outlook for DMUs in the US market significantly is for an existing product to be demonstrated in service and found to have the performance characteristics and customer appeal necessary to change the discussion. Such equipment does exist in Europe but since it is not FRA compliant, it requires a waiver to be operated in the US.

23. Long Term Goals for Car Design

The existing manufacturing capacity in the North American market has been focused in recent years on the commuter rail and transit markets. There has been little business to be done in intercity products and so capabilities there have been limited.

With a new stream of orders, manufacturers will have to make decisions about whether to devote capability and production capacity to the new product types. Given the scale of orders under consideration, it is likely that they will wish to do so. Both the intercity rail planners and the commuter rail operators would prefer that manufacturers evolve product lines that can be adapted to meet both requirements.

The concept under consideration here would be for families of cars. The configuration of the "box" would be the variable element but key subsystems would be designed to have broad applicability. These systems would include such things as truck design, brakes, air conditioning, electrical controls and door systems.

Such an approach would mean that a manufacturer was looking at a far larger potential customer base for the basic design and would have fewer obstacles to switching from one type of car manufacture to another. It would also increase the customer base for sub-systems which should be beneficial to all customers.

A change such as this will not be immediate. For a start, there are some well established existing products in the market. It is unlikely that the manufacturers of those products would be willing to scrap designs that have sold well to create something new. If, however, Amtrak demonstrates a long term commitment to its fleet acquisition strategy, this will gradually persuade the manufacturers of the value in an approach such as is proposed here. For those manufacturers who may be entering the market, it would make sense to take such an approach from the beginning.

24. Further Updates

There are a number of areas of further development that will be required for future updates to this strategy. These areas are as follows:

- Integration of additional ridership projections. The ridership assumptions built into the modeling used in this report were conservative estimates of expected growth drivers in coming years. In parallel, more detailed analysis of the potential for growth in the short, medium and long terms has been underway for individual routes. As the results from this analysis become available, they will be incorporated into the fleet modeling to provide a refined estimate of future demand. (It should be noted that this is unlikely to have a significant impact on the level of equipment acquisition in the coming years. Instead, it will affect the rate of retirement of the existing fleets. If substantial growth is forecast over and above what has been assumed, then it may be necessary to increase the acquisition rates assumed.)

- The concepts previously discussed relating to replacement strategies of fleet used in state services are pending further discussion with the states.

- Push-pull analysis. Some analysis should be done of the impact of a move to push-pull type operations on the various corridors that don't currently operate in that manner to ascertain the effect on turnaround times at the end of the routes and the overall level of equipment necessary to support the services.

- As identified in Section 20, the merits of trainsets should be more thoroughly analyzed to see whether they would provide a more cost beneficial service on certain routes. This analysis will need to consider the full life cycle cost of such a change.

25. Summary

Amtrak faces a significant fleet replacement process in the coming years. The backlog that has developed has to be dealt with if the current intercity passenger rail system is to be maintained and improved. Forecasted growth in demand only increases this need.

The total estimated cost of replacements and growth has been calculated that will allow the acquisition process to proceed and meet the needs of the traveling public in the coming years. This level of funding will ensure that goal is met. Not only does new equipment enter service, but it is acquired in a manner that will attract a domestic supplier base capability in the intercity sector.

The short and long term fleet replacement plan will require several billion dollars of investment. Financial projections including pricing assumptions are noted in the "Government Audience Only" appendix as a subset of the Fleet Strategy.

The acquisitions that have been ordered in the past year have provided the first steps toward fleet strategy implementation. This year's updates have reflected that progress, as well as further development in other areas of the service. The assumptions and projections remain under constant review and Amtrak will strive to build on the achievements already made to build a sustainable fleet of equipment.

Attachment 1

Fleet Counts and Availability

Counts and Availabilty FY12 - FY17 (Includes Funded State Corridor Growth)	End FY 12				End FY 13				End FY 14				End FY 15				End FY 16				End FY 17			
Equipment Type:	AmtrakFod	Active	PlannedShp	Planned Availability	AmtrakFod	Active	PlannedShp	Planned Availability	AmtrakFod	Active	PlannedShp	Planned Availability	AmtrakFod	Active	PlannedShp	Planned Availability	AmtrakFod	Active	PlannedShp	Planned Availability	AmtrakFod	Active	PlannedShp	Planned Availability
Car Fleet:																								
Amfleet I	484	473	46	427	484	473	46	427	484	473	46	427	484	473	46	427	484	473	46	427	484	473	46	427
Cab Cars / NPCU	41	39	8	31	41	39	8	31	41	39	8	31	41	39	8	31	41	39	8	31	41	39	8	31
Horizon	103	95	17	78	103	93	16	77	103	93	16	77	103	93	16	77	103	93	16	77	103	93	16	77
Viewliner/LDSL	53	51	10	41	78	76	15	61	183	181	36	145	183	181	36	145	183	181	36	145	183	181	36	145
North Carolina Cars	14	12	0	12	14	11	0	11	14	11	0	11	14	11	0	11	14	11	0	11	14	11	0	11
Amfleet II	145	145	22	123	145	145	22	123	145	145	22	123	145	145	22	123	145	145	22	123	145	145	22	123
Heritage Baggage Cars	416	73	13	60	391	73	13	60	391	60	11	49	391	25	5	20	391	25	5	20	391	25	5	20
Heritage Diner	22	20	5	15	22	12	2	10	22	8	0	8	22	0	0	0	22	0	0	0	22	0	0	0
Heritage Dome/Parlor Cars	6	6	1	5	6	6	2	4	6	6	2	4	6	6	2	4	6	6	2	4	6	6	2	4
Surfliner	50	49	9	40	50	49	9	40	50	49	9	40	50	49	9	40	50	49	9	40	50	49	9	40
California Cars	78	78	10	68	78	78	10	68	78	78	10	68	78	78	10	68	78	78	10	68	78	78	10	68
Superliner	456	428	77	351	456	428	77	351	456	428	77	351	456	428	77	351	456	428	77	351	456	428	77	351
Turboliners	35	0	0	0	35	0	0	0	35	0	0	0	35	0	0	0	35	0	0	0	35	0	0	0
Auto Carrier	80	80	9	71	80	80	9	71	80	80	9	71	80	80	9	71	80	80	9	71	80	80	9	71
Other (2 wheel cars / 2 track insp cars / 1 training car)	5	4	0	4	5	4	0	4	5	4	0	4	5	4	0	4	5	4	0	4	5	4	0	4
Car Fleet Total:	1,988	1,553	227	1,326	1,988	1,567	229	1,338	2,093	1,655	246	1,409	2,093	1,612	240	1,372	2,093	1,612	240	1,372	2,093	1,612	240	1,372
Locomotives:																								
Electric Locomotives	66	62	17	45	66	62	17	45	66	64	16	48	66	64	16	48	70	66	16	50	70	66	16	50
Diesel Locomotives	325	289	45	244	325	309	45	264	325	309	45	264	325	309	45	264	325	309	45	264	325	309	45	264
Switchers	51	45	0	45	51	45	0	45	51	45	0	45	51	45	0	45	51	45	0	45	51	45	0	45
Locomotives Totals	442	396	62	334	442	416	62	354	442	418	61	357	442	418	61	357	446	420	61	359	446	420	61	359
Train Sets:																								
Acela																								
- Cars	121	121	24	97	121	121	24	97	121	121	24	97	161	161	32	129	161	161	32	129	161	161	32	129
- Locomotives	40	40	8	32	40	40	8	32	40	40	8	32	40	40	8	32	40	40	8	32	40	40	8	32
Talgo																								
- Cars	61	60	3	57	61	60	3	57	61	60	3	57	61	60	3	57	61	60	3	57	61	60	3	57
- Locomotives	6	6	1	5	6	6	1	5	6	6	1	5	6	6	1	5	6	6	1	5	6	6	1	5
Train Sets Total	228	227	36	191	228	227	36	191	228	227	36	191	268	267	44	223	268	267	44	223	268	267	44	223
Grand Total	2,658	2,176	325	1,851	2,658	2,210	327	1,883	2,763	2,300	343	1,957	2,803	2,297	345	1,952	2,807	2,299	345	1,954	2,807	2,299	345	1,954

*Note:
Service requirements are projected and include estimated state-funded corridor service needs

Attachment 2

Projected Equipment Acquisition by Count

Fiscal Year	New Single Level Car		Horizon		Surfliner (40) Superliner (456) + Dome Parlor Cars (12)		Auto Carrier		Work Cars		Electric Locomotives		Diesel Locomotives (incl. Switchers)		Acela Coaches		High Speed Trainsets	
	Owned / Leased	New	Owned / Leased	New	Owned / Leased	New	Owned / Leased	New	Owned / Leased	New	Owned / Leased	New	Owned / Leased	New	Owned / Leased	New	Owned / Leased	New
2011	**825**		**103**		**502**		**80**		**5**		**66**		**325**		**121**		**20**	
2012														4 R				
2013		25 R										4 R		2 R				
2014		105 R										24 R		3 R				
2015												24 R		3 R		40 A		
2016		100 R										18 R		55 R				
2017		100 R												55 R				
2018		100 R				100 R								55 R				
2019		100 R				100 R								55 R				
2020		100 R				100 R								55 R				10 A
2021		100 R				100 R								35 R				
2022		95 R				100 R												
2023						8 R												
2024																		
2025								80 R										10 R
2026																		10 R
2027																		12 A
2028																		
2029																		
2030																		
2031																		
2032																		
2033																		
2034														6 R				
2035														6 R				
2036														55 R				
2037														55 R				
2038												4 R		55 R				
2039												24 R		55 R				
2040												24 R		55 R				10 R
2041												18 R		35 R				
2042																		
Total		**825**				**508**		**80**				**140**		**644**		**40**		**52**

A = Additional Equipment
R = Replacement Equipment

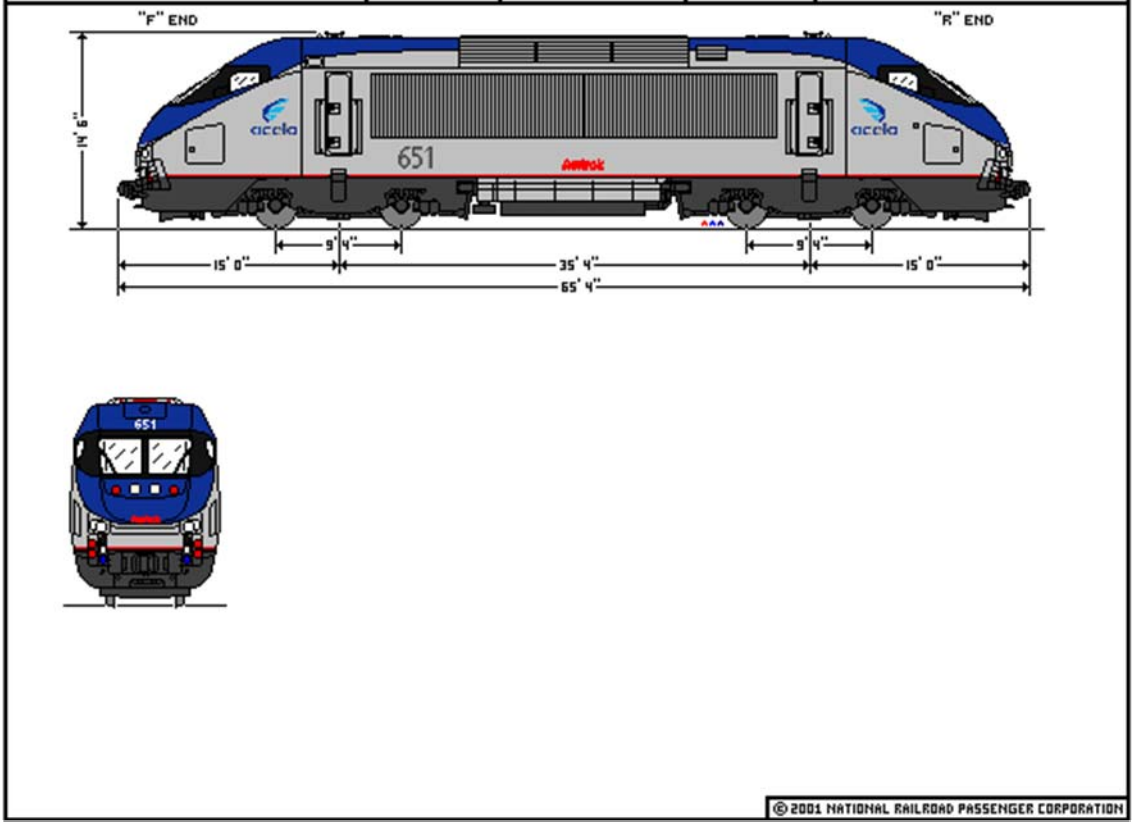
Attachment 3

Existing Amtrak Equipment:

The following document is a synopsis of the core equipment types in Amtrak's fleet. There are many sub-types of each equipment class. Full details of the individual sub-types can be found in the Amtrak Equipment Guide from which this information was extracted. For the purposes of brevity, this attachment has one entry for each main equipment type as an example for reference purposes.

Electric Motive Power

HHP-8 ELECTRIC LOCOMOTIVE	8000 HP	Eqpt. Code: EH	135 MPH	Unit Numbers: 650-664



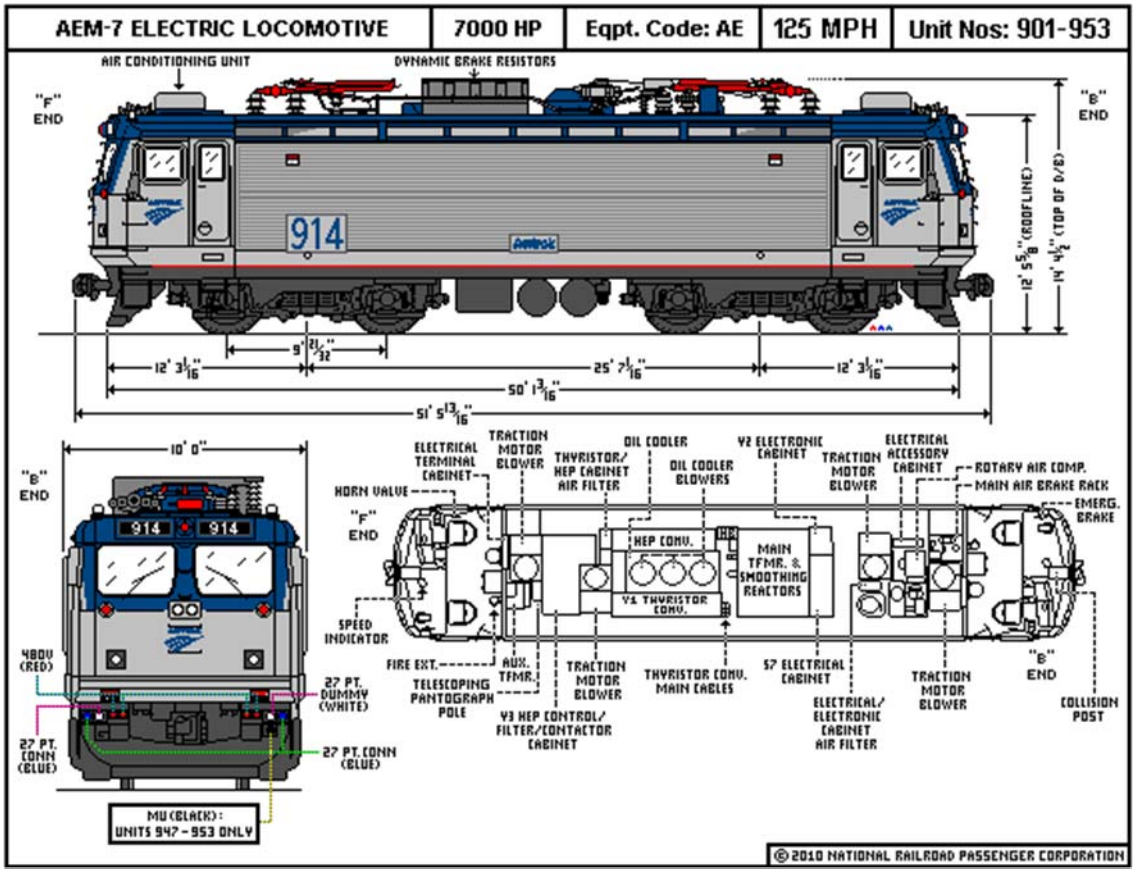
Active: 15

Builder: Alstom

Entered Service: 2000-2001

Notes: Includes regenerative braking; based on Acela power car design. Purchased to provide additional locomotives for North End Electrification and to provide heavy-haul capability to replace aging E-60's.

Electric Motive Power



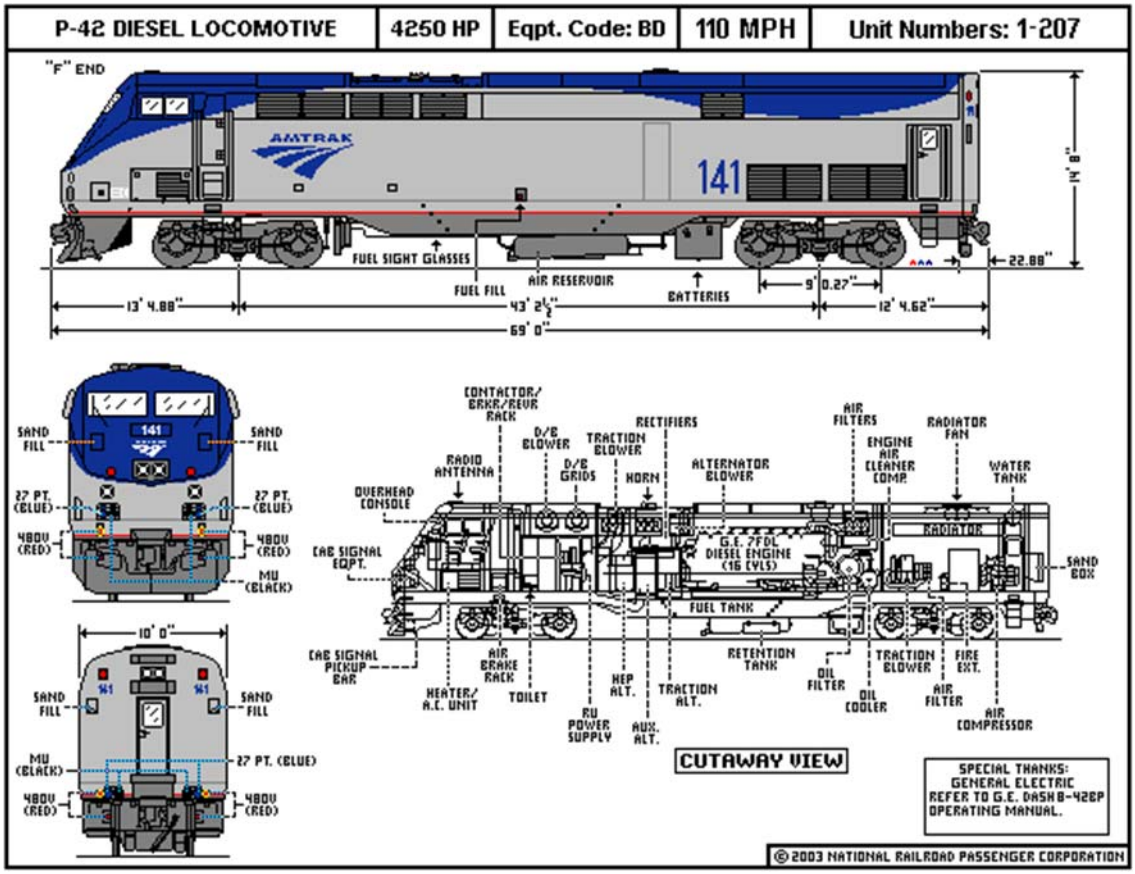
Active:49

Builder: ASEA/EMD

Entered Service: 1980-1988

Notes: 29 are AC conversions with regenerative braking; other 20 are unmodernized DC units. Purchased in early 1980's to supplement 1970's-era E-60's and replace 1930's-era GG-1's.

Diesel-Electric Road Power – P-42



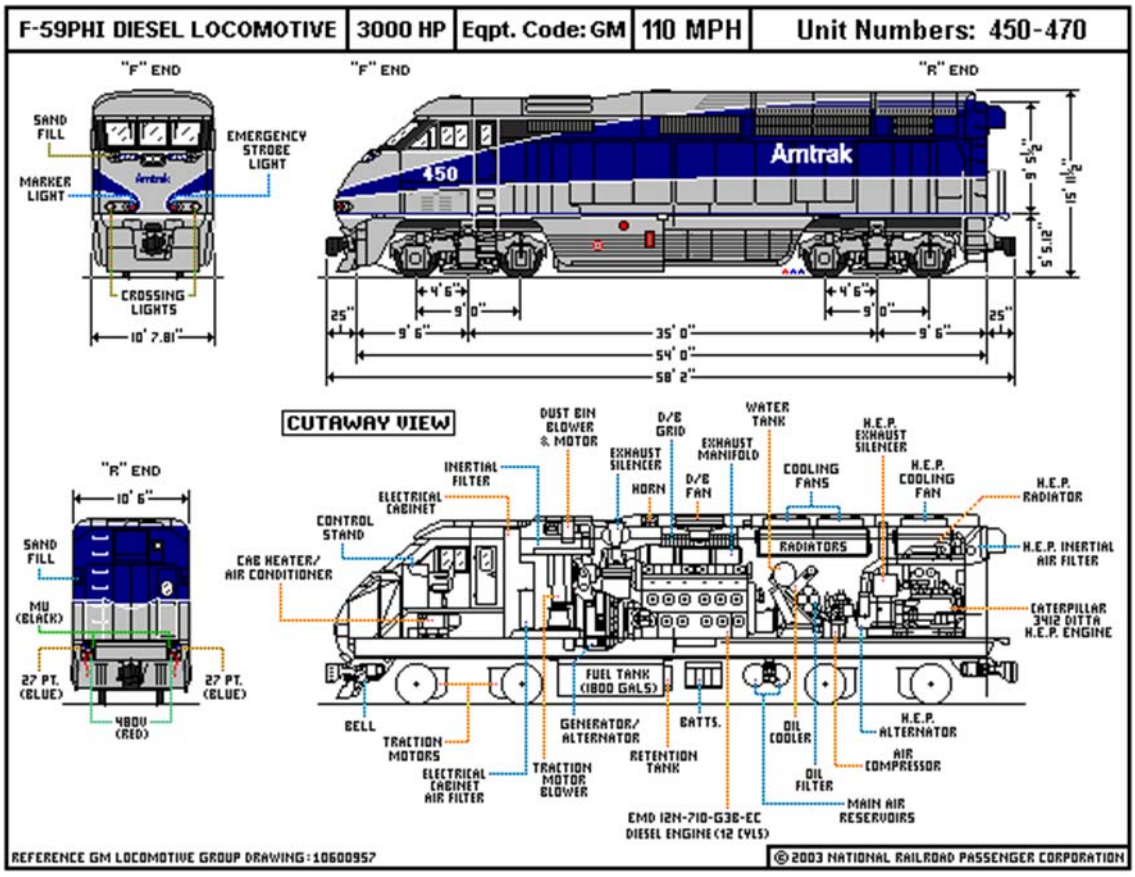
Active: Approximately 200

Builder: GE

Entered Service: 1996-2001

Notes: Used in long-distance and corridor service

Diesel-Electric Road Power – F59PHI



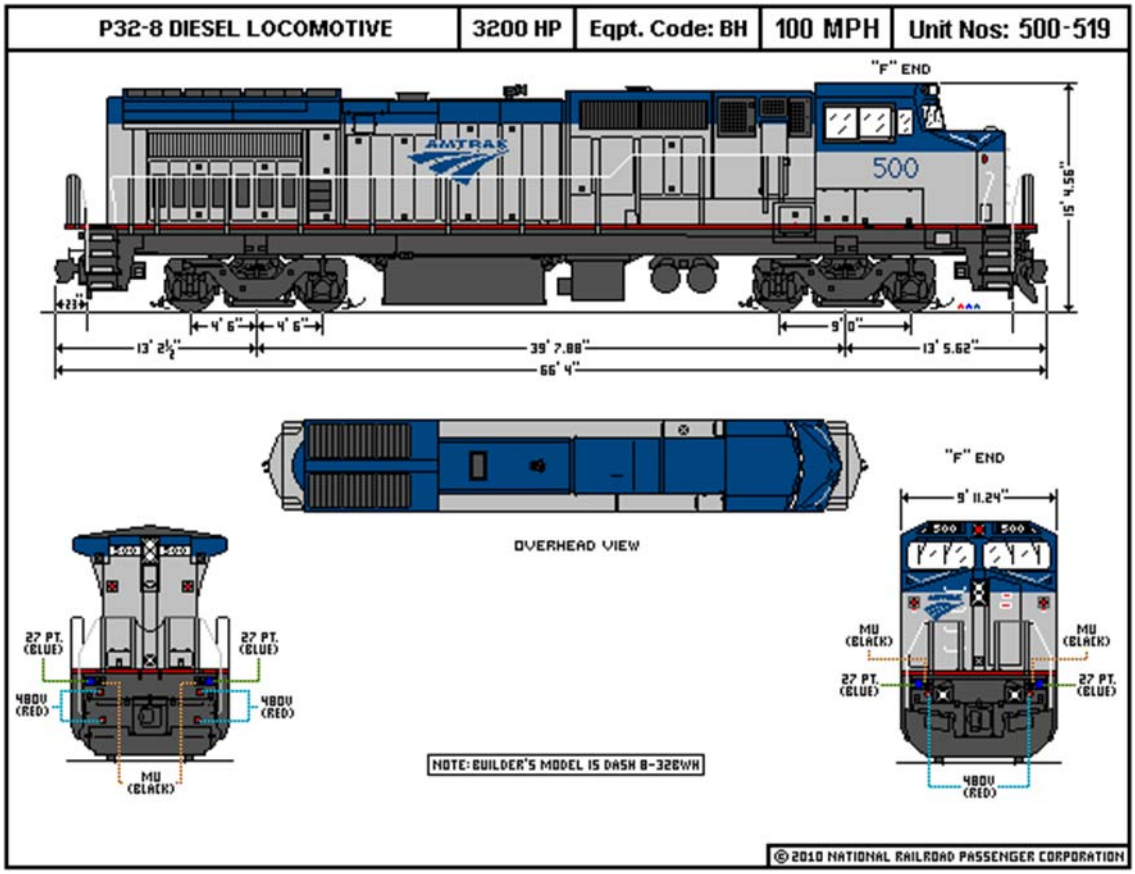
Active: 21

Builder: EMD

Entered Service: 2000

Notes: Purchased for Western corridor services

Diesel-Electric Road Power – P32-8



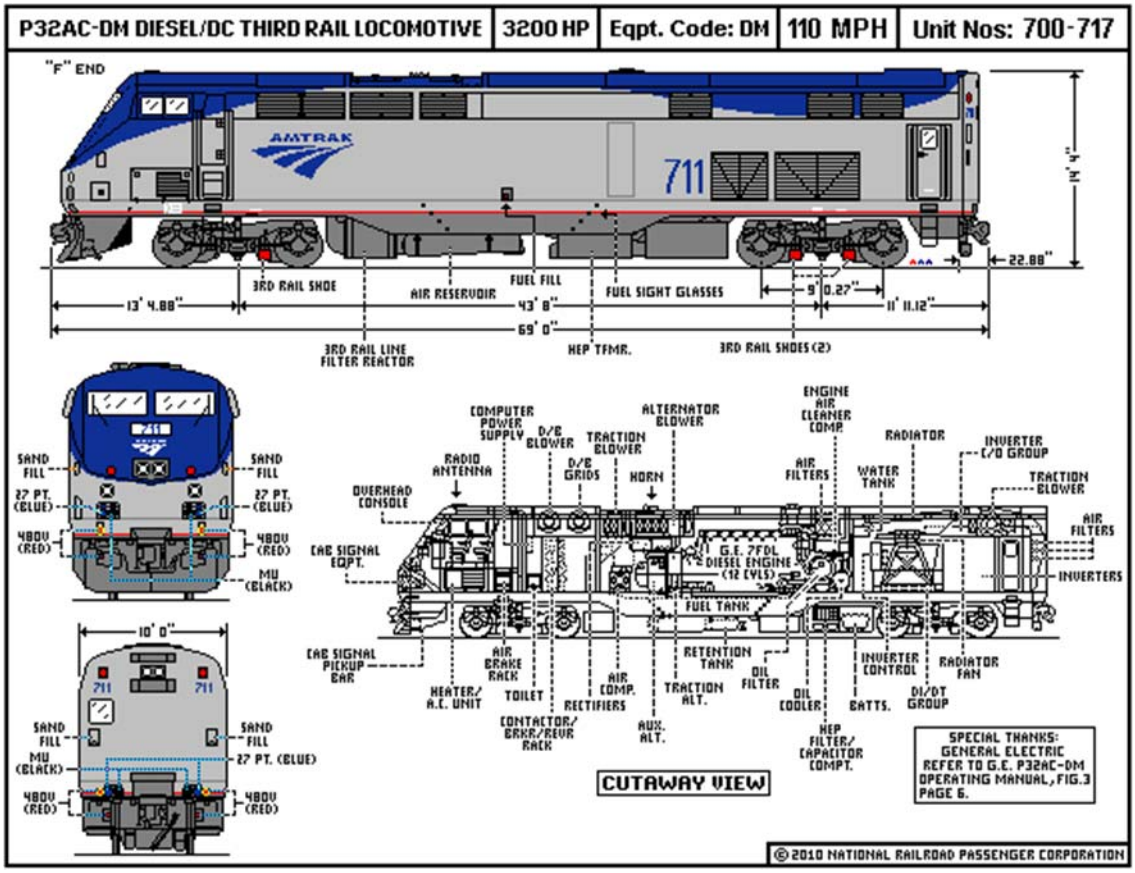
Active: 18

Builder: GE

Entered Service: 1991

Notes: Used for terminal switching and some long-distance service

Diesel-Electric Road Power – P32AC-DM



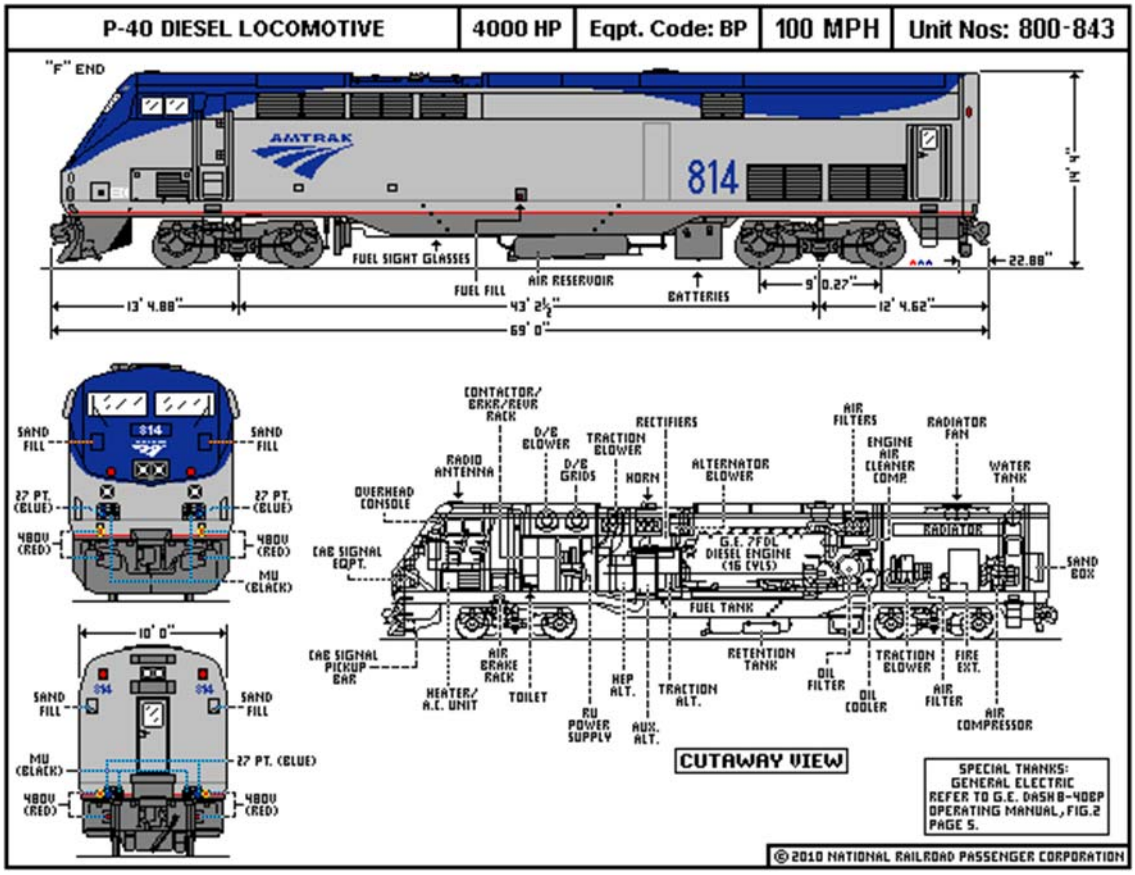
Active: 18

Builder: GE

Entered Service: 1995 and 1998

Notes: "Dual mode" design allows operation on the DC third-rail electrification system in the New York terminal zone.

Diesel-Electric Road Power – P-40



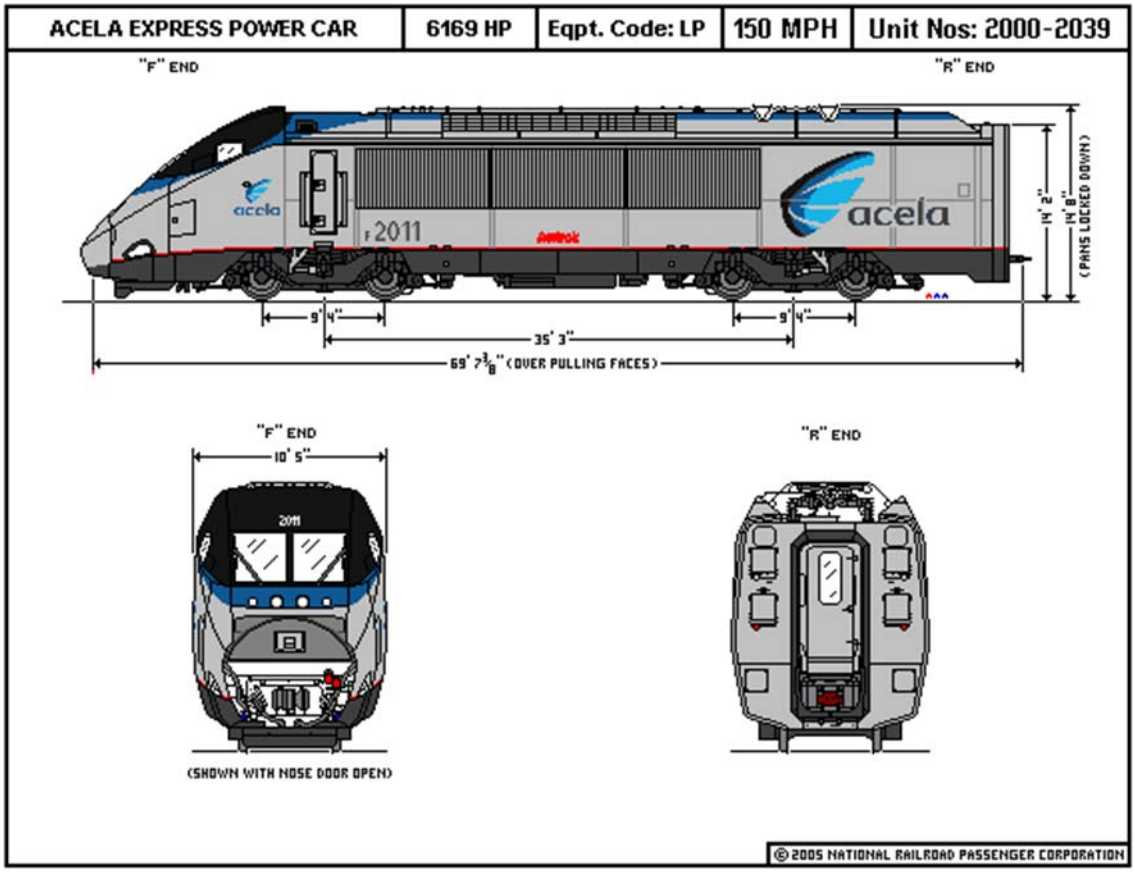
Active: 15 scheduled to return to service by Spring 2011

Builder: GE

Entered Service: 1993

Notes: 15 units returned to service from storage with ARRA funding.

Powered Integral Trainsets – *Acela Express*



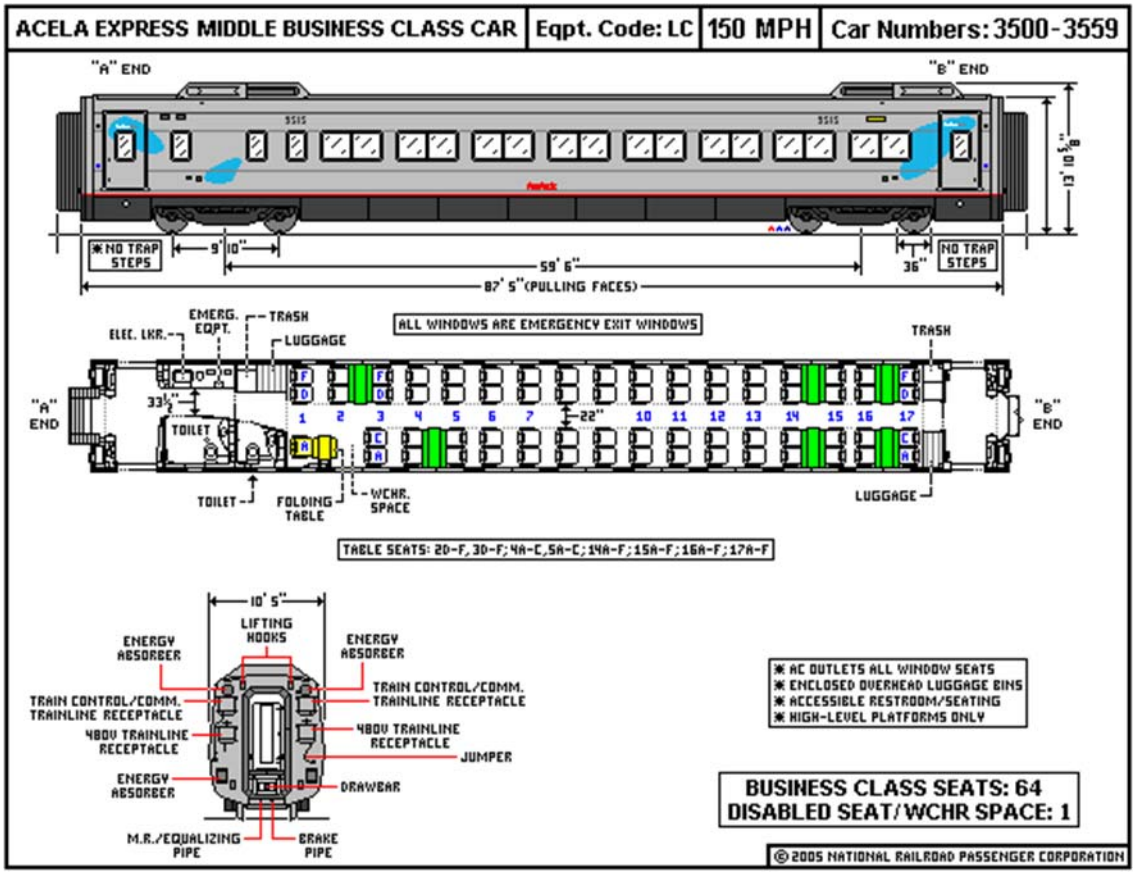
Active:40

Builder: Bombardier

Entered Service: 1999-2000

Notes: Includes regenerative braking: one unit semi-permanently coupled to each end of every *Acela Express* trainset.

Powered Integral Trainsets – *Acela Express*



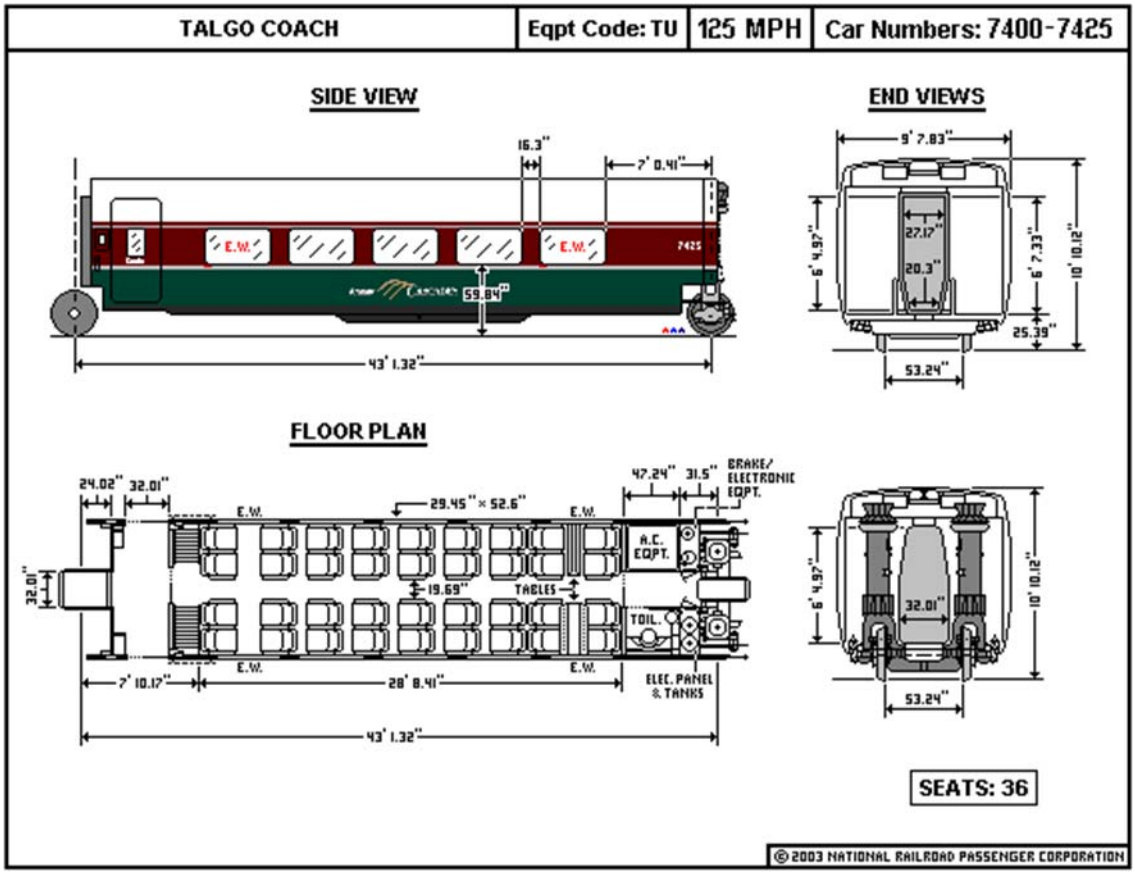
Active: 120 total unpowered *Acela Express* trailer cars

Builder: Bombardier

Entered Service: 1999-2000

Notes: 6 cars per *Acela Express* trainset, 5 Business Class and 1 Café.

Unpowered Integral Trainsets – *Cascades*



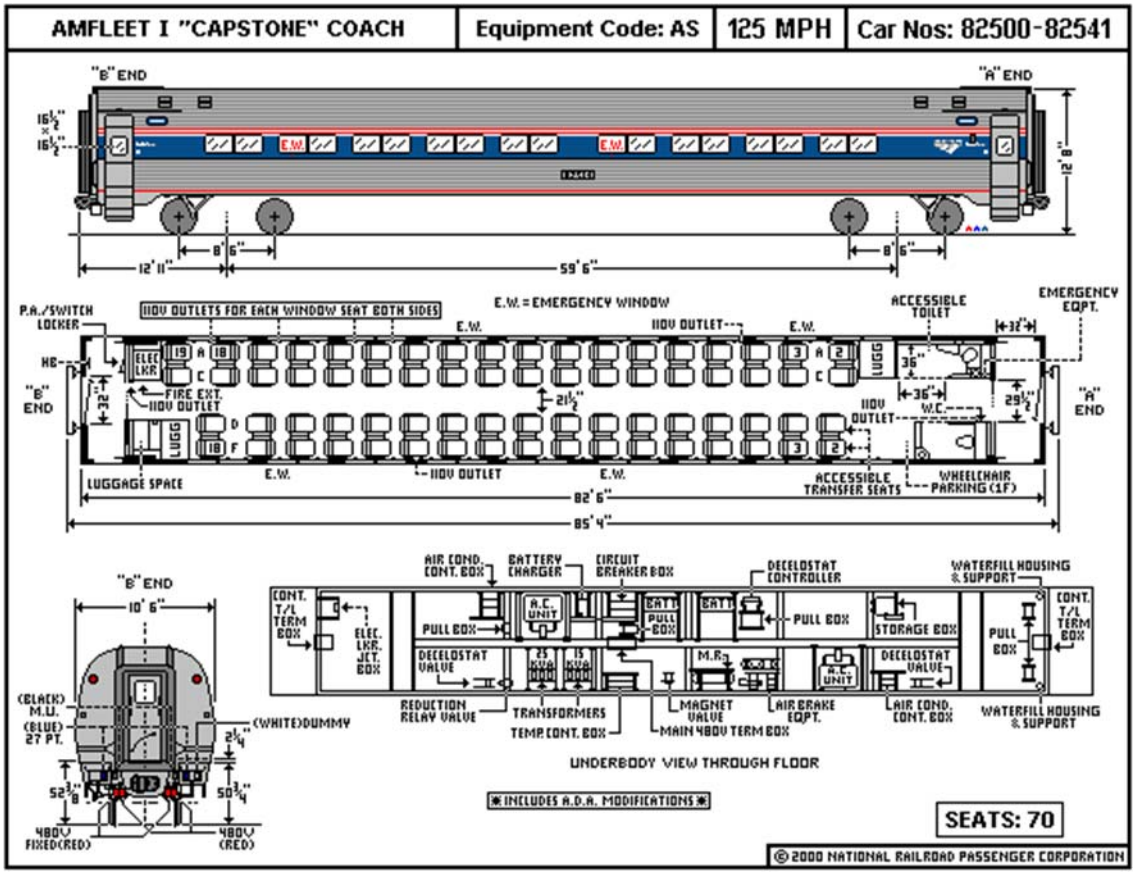
Active: 13 cars per trainset. Amtrak owns 2 trainsets, Washington DOT 3.

Builder: Talgo

Entered Service: 1994 and 1999

Notes: Operate in Cascade Corridor service in the Pacific Northwest.

NEC Single Level Equipment



Active: Approximately 440

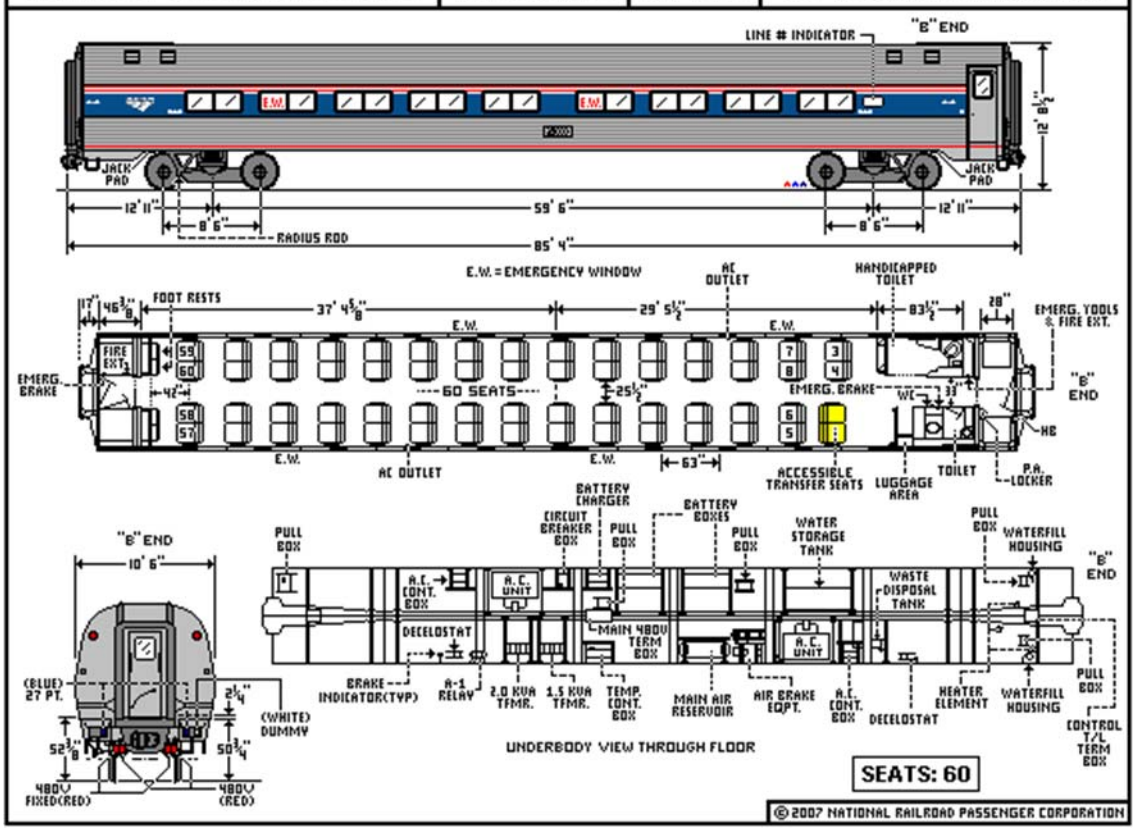
Builder: Budd

Entered Service: 1975-1977

Notes: Includes coach, business class and food service configurations

Single Level Long Distance Equipment

AMFLEET-II COACH (NEW ADA MOD)	Eqpt Code: AI	125 MPH	Car Numbers: 25000 Series



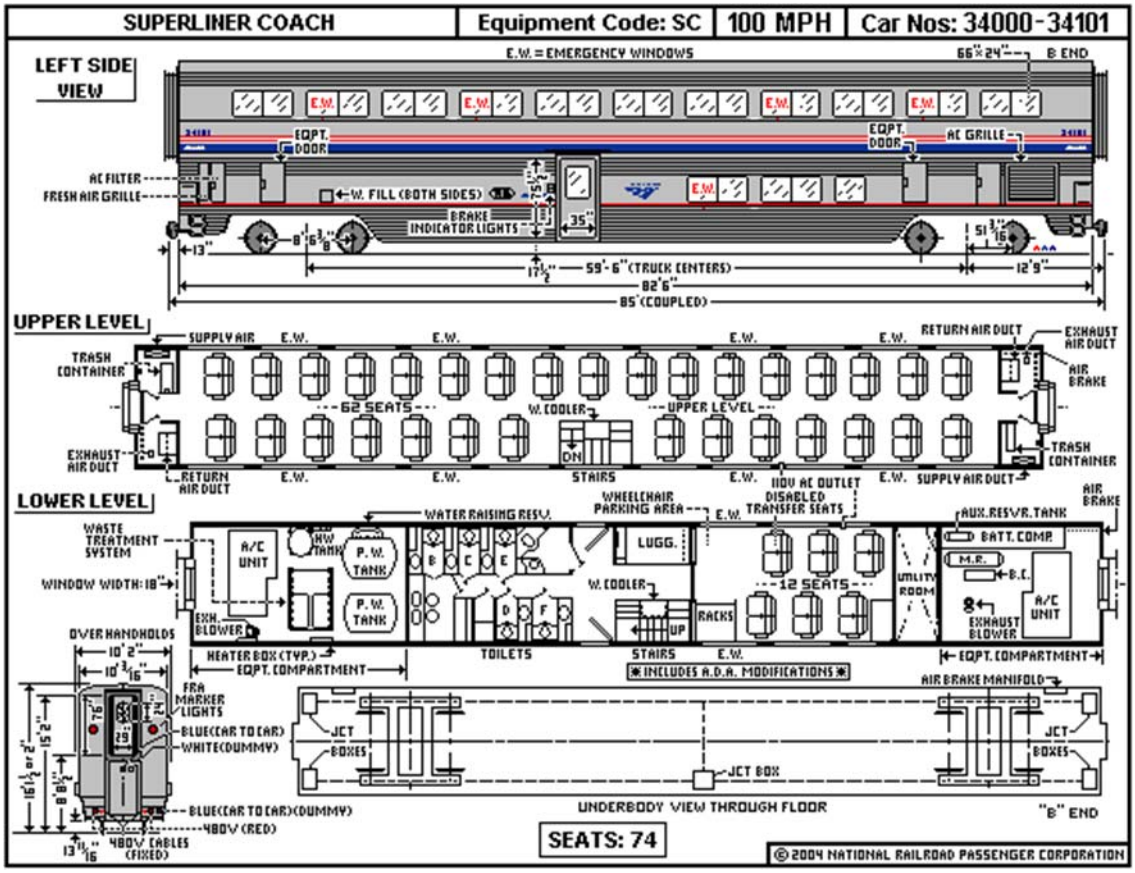
Active: Approximately 145

Builder: Budd

Entered Service: 1981-1983

Notes: Used in long and medium distance services operating to/from New York Penn Station; includes coach and lounge configurations

Bilevel Long Distance Equipment



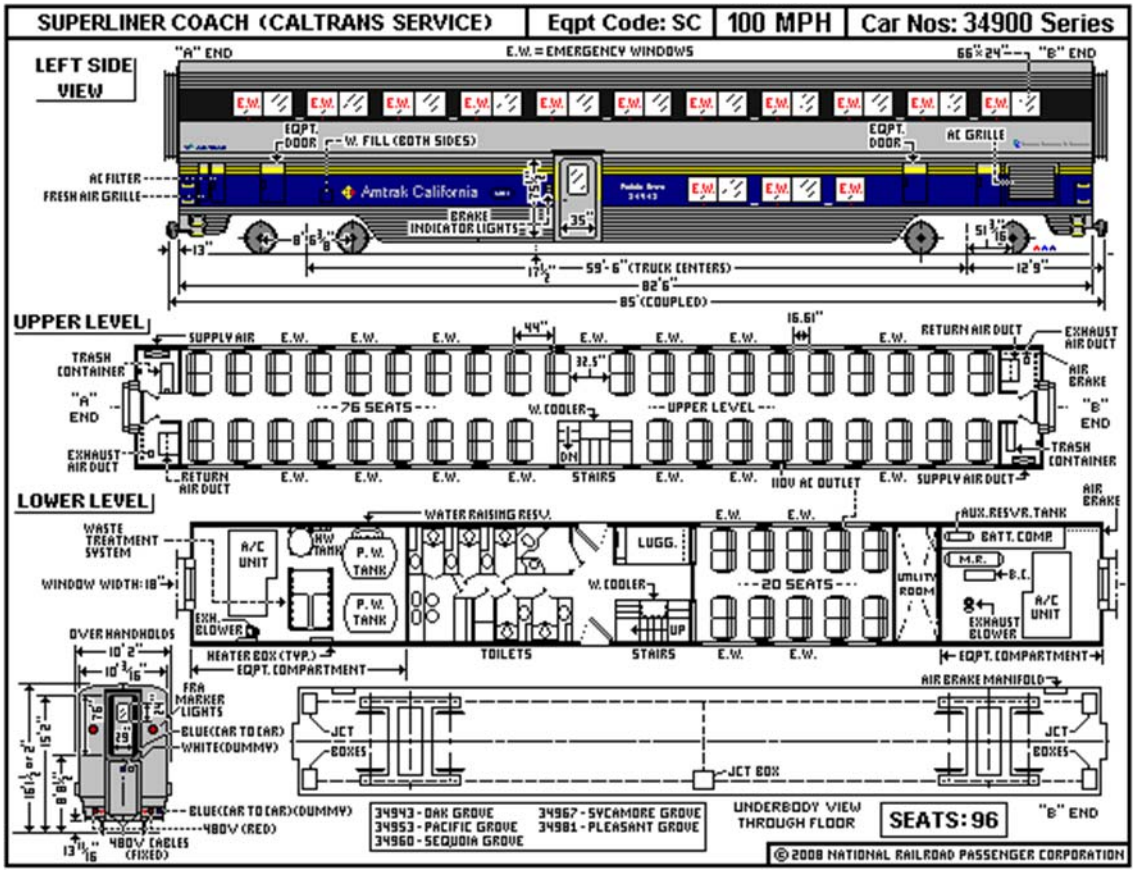
Active: Approximately 245

Builder: Pullman-Standard

Entered Service: 1979-1981

Notes: Includes coach, diner, lounge, sleeper and transition cars with sub-variants.

Bilevel Corridor Equipment



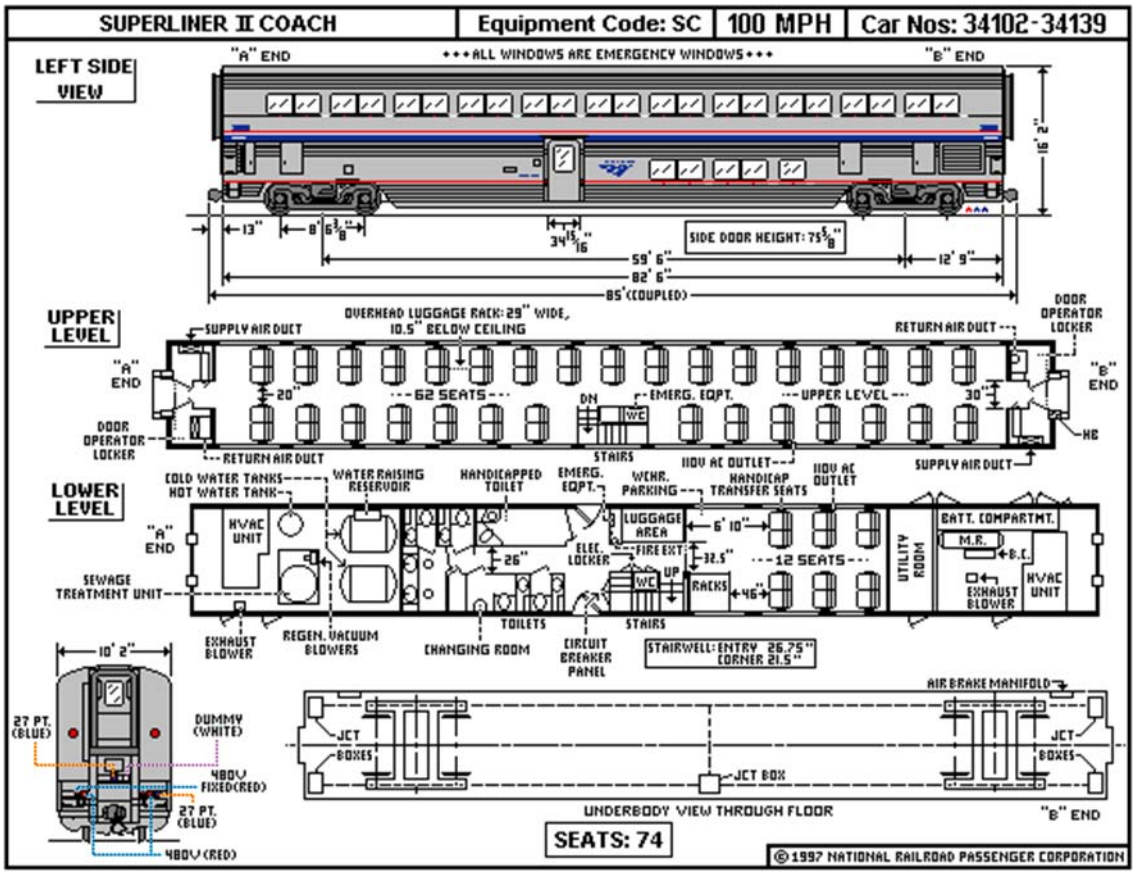
Active: 7

Builder: Pullman-Standard

Entered Service: 1979-1981

Notes: Conversion of wreck-damaged Superliner coaches funded by CalTrans for corridor service

Bilevel Long Distance Equipment



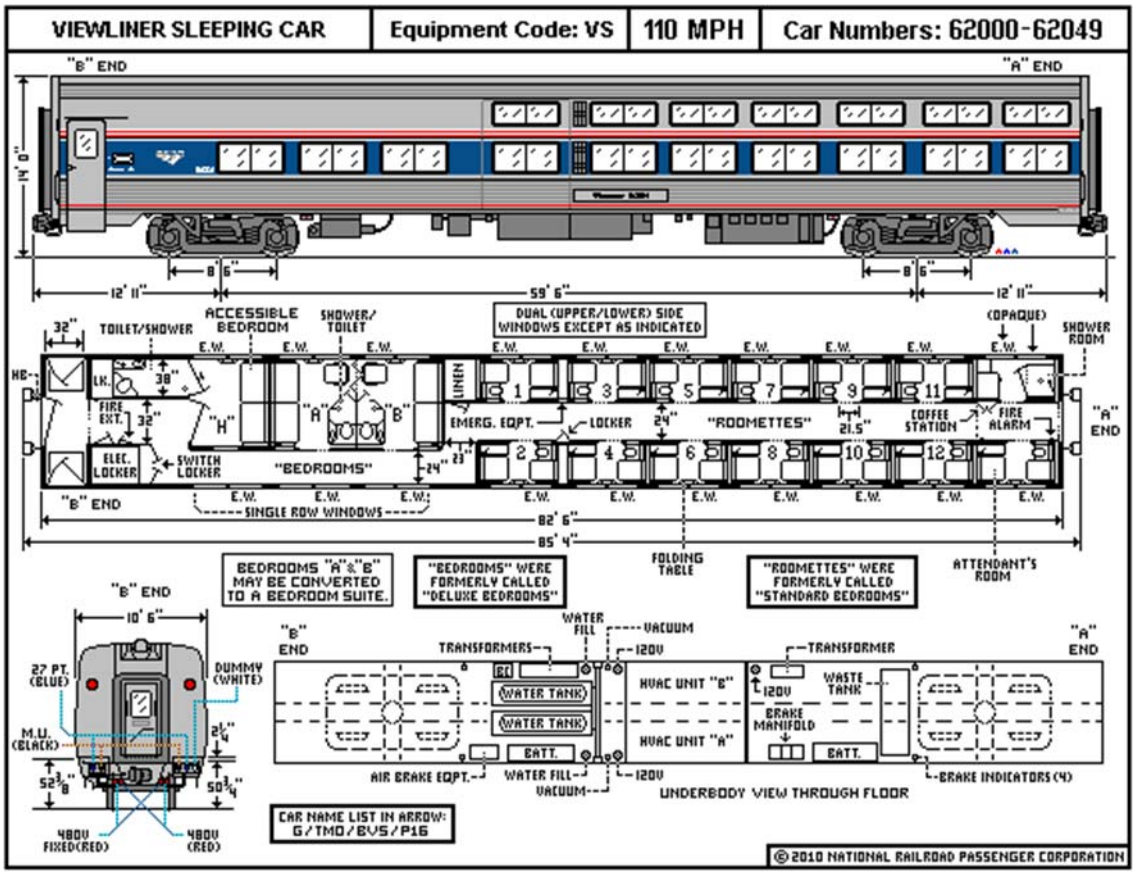
Active: Approximately 180

Builder: Bombardier

Entered Service: 1993-1996

Notes: Used on long distance and some corridor services; compatible with Surfliner and California cars

Single Level Long Distance Equipment



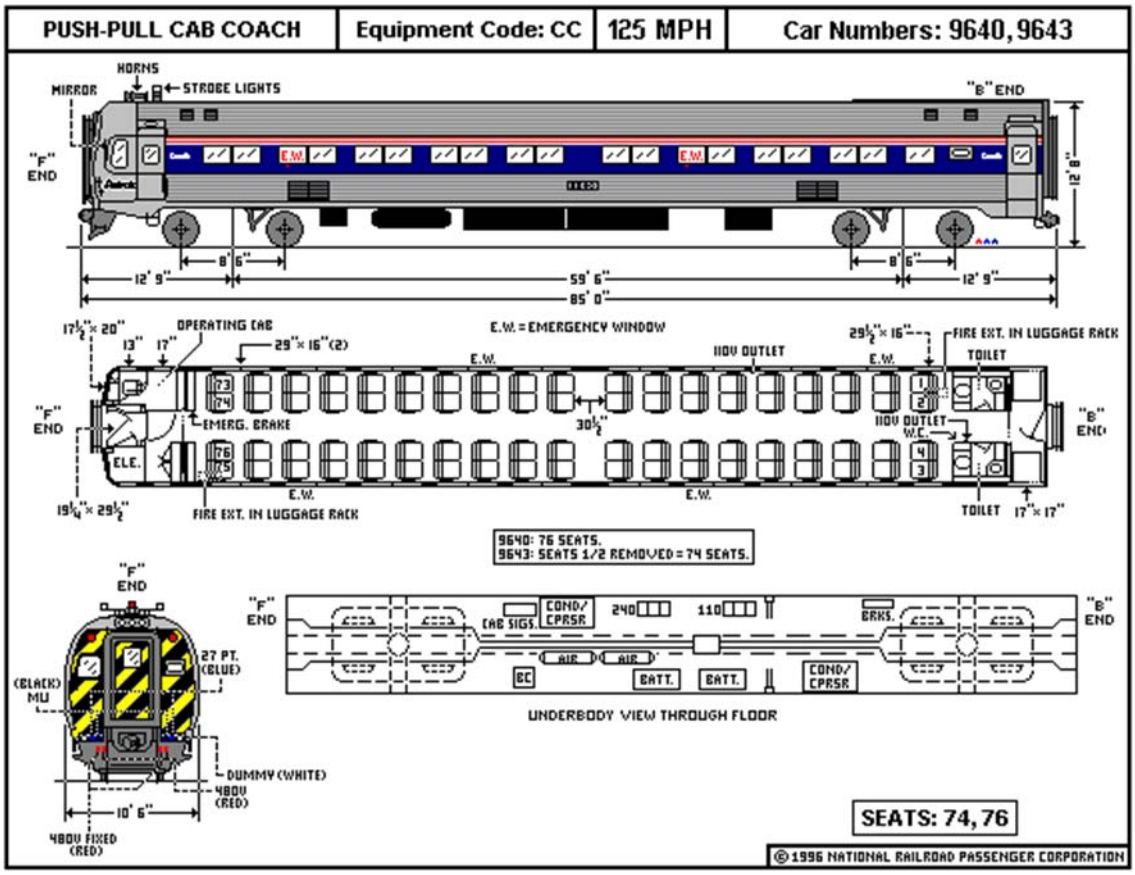
Active: 50

Builder: Amerail

Entered Service: 1995-1996

Notes: Used in trains operating to/from New York Penn Station; 12 revenue roomettes, 2 bedrooms, 1 accessible bedroom

Push-Pull Equipment



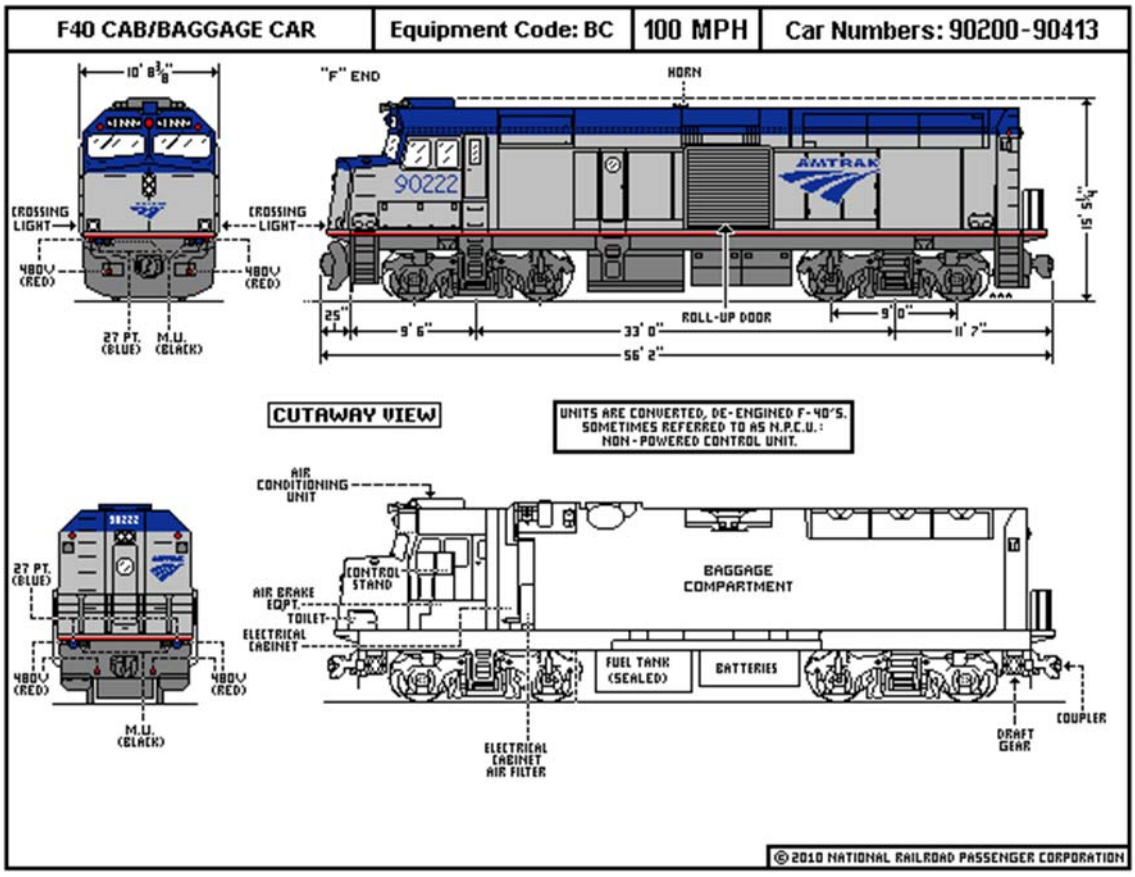
Active: 17

Builder: Budd

Entered Service: 1967

Notes: Rebuilt from *Metroliner* EMU cars; several variations in interior capacities.

Push-Pull Equipment



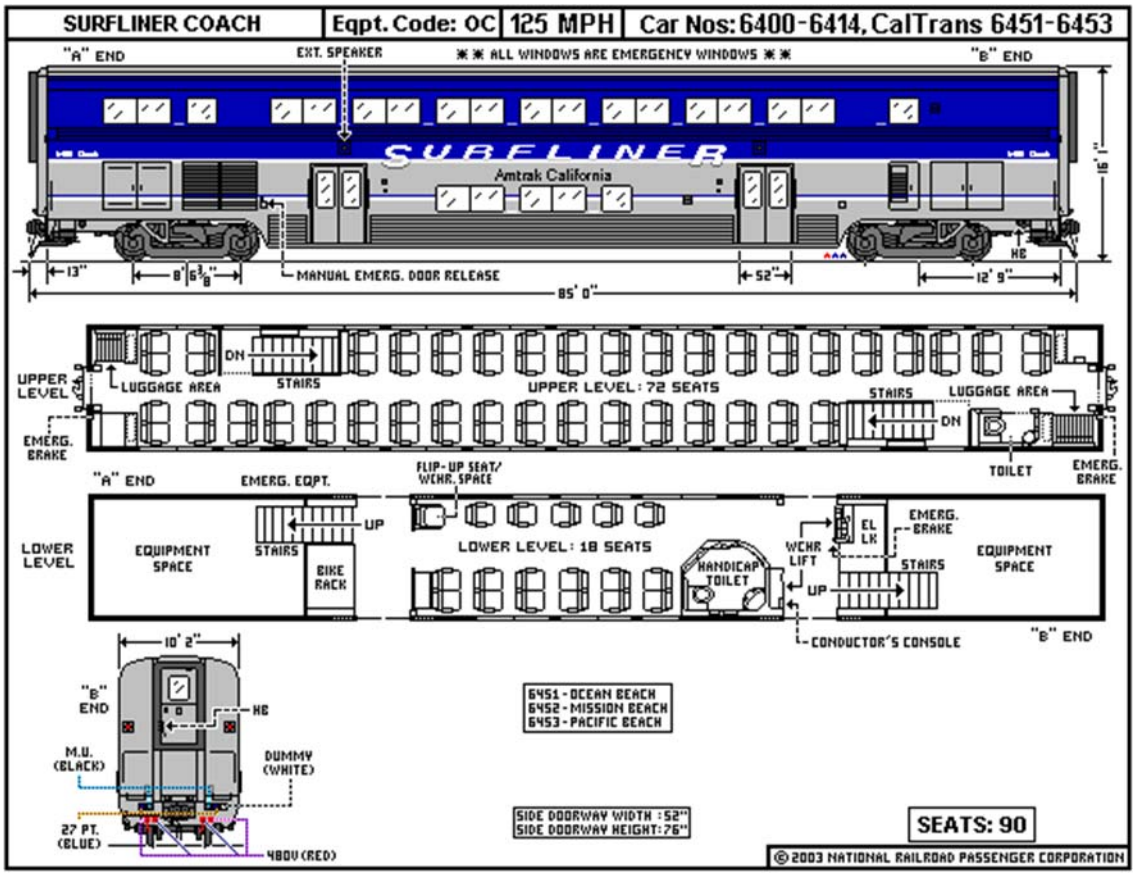
Active: 22

Builder: EMD

Entered Service: 1976-1981

Notes: Surplus F-40PH locomotives converted to cab/baggage role.

Bilevel Corridor Equipment



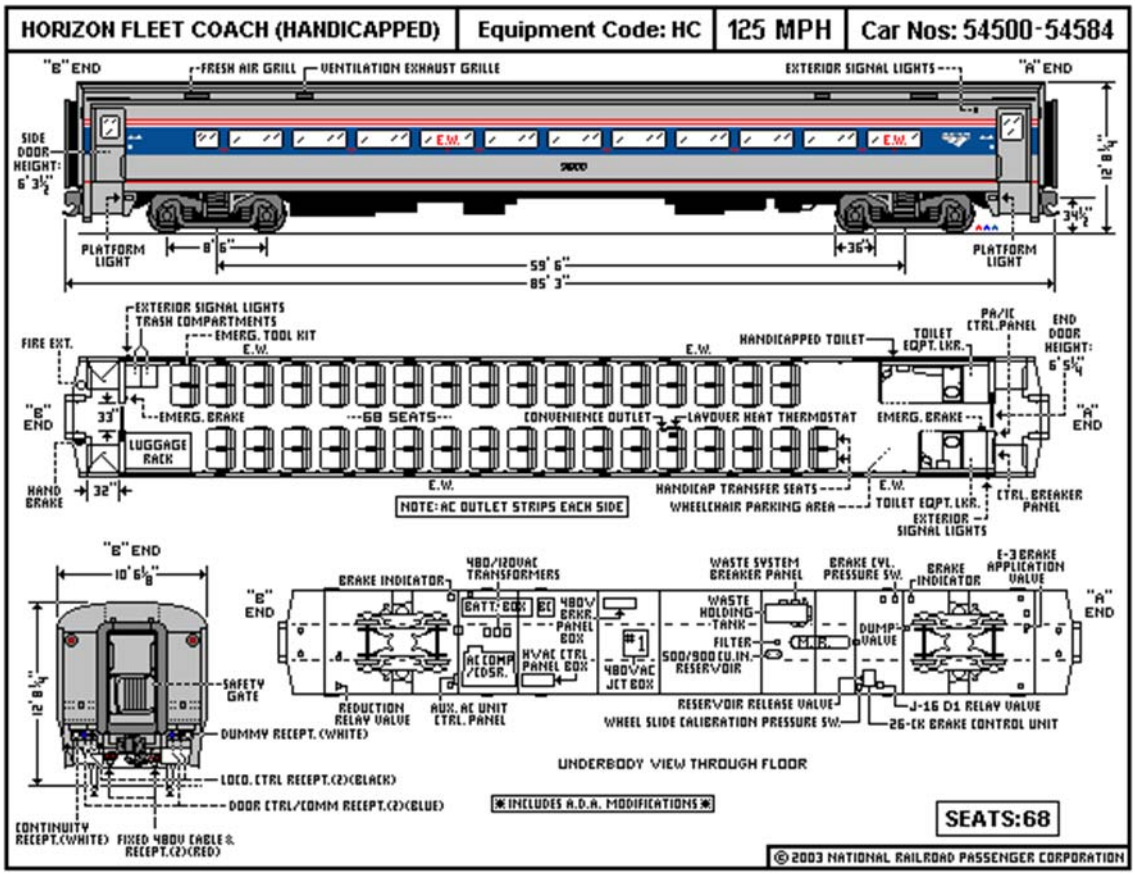
Active: 40

Builder: Alstom

Entered Service: 2000-2001

Notes: Additional cars are owned by State of California

Single Level Corridor Equipment



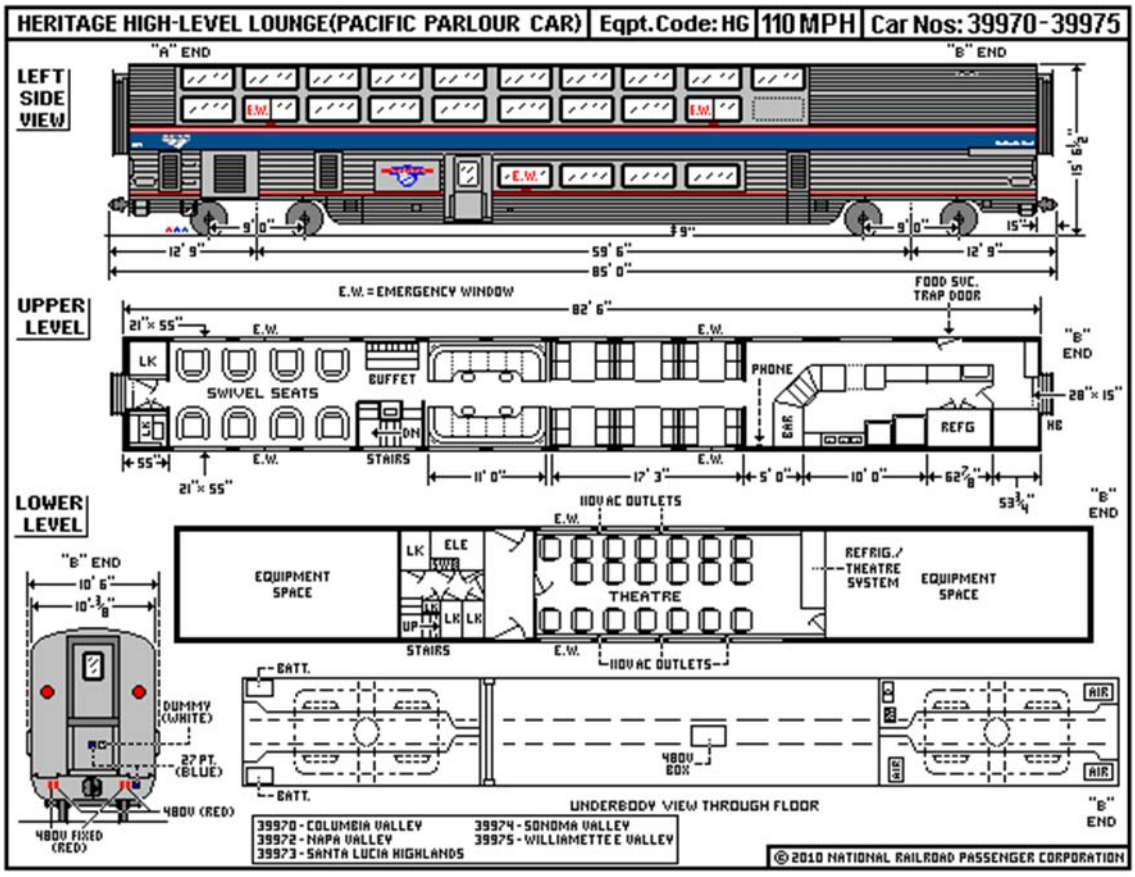
Active: Approximately 100

Builder: Bombardier

Entered Service: 1989-1990

Notes: Includes coach and food service configurations

Bilevel Long Distance Equipment



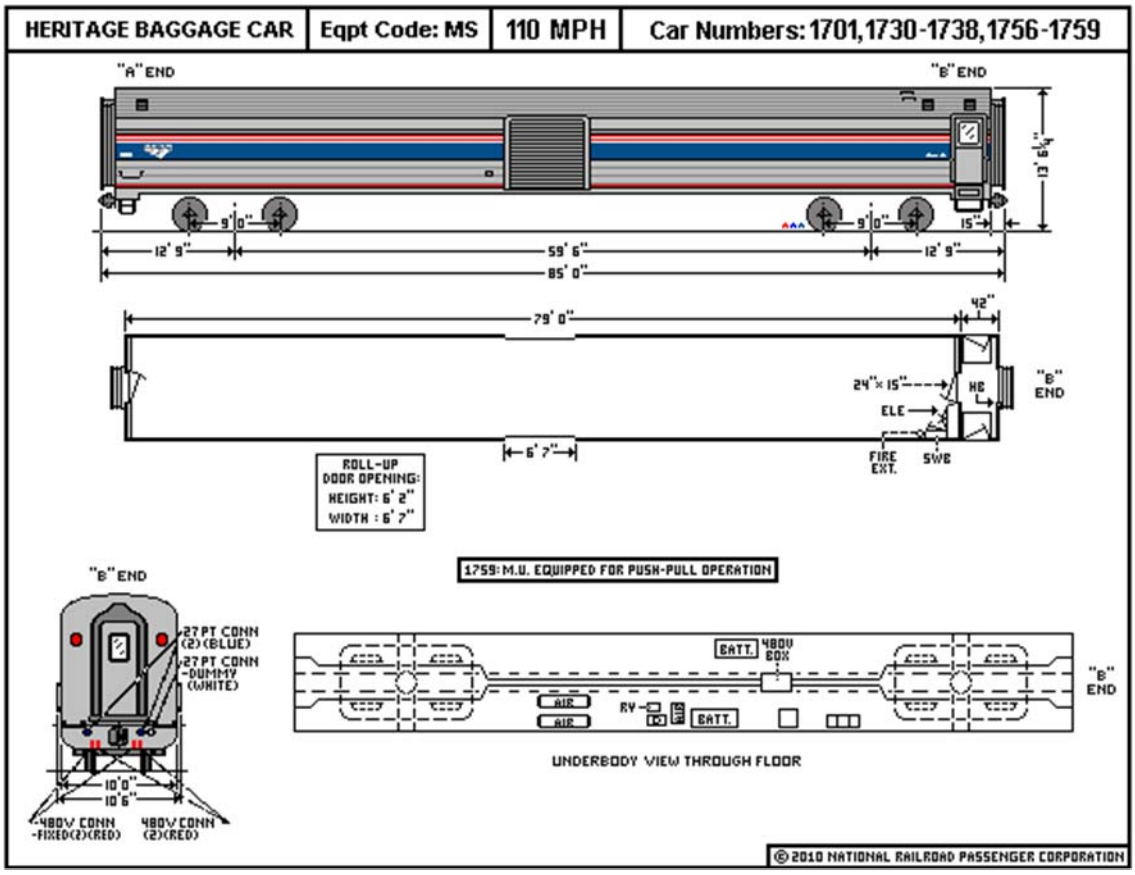
Active: 5

Builder: Budd

Entered Service: 1956

Notes: Used exclusively on the *Coast Starlight*

Single Level Long Distance Equipment



Active: Approximately 86

Builder: Various

Entered Service: 1950-1961

Notes: Diagram is representative; class includes several distinct groups of cars (including dining cars) as well as several unique designs. Built between 1950 and 1961 for various railroads.

Diesel –Electric Switchers (Various Models)

Type	Unit #s:	Active Count	HP	Speed	Year	Builder
GP38H-3	520-527	8	2000	100	1966 (2004 Rebuild)	EMD
MP15	530-539	10	1200	65	1970	EMD
SW1500	540-541	2	1500	60	1973	EMD
SW1001	569	1	1500	60	1973	EMD
GP-15D	570-579	10	1500	65	2004	MPI
MP14, MP21	590,591	2	1400, 2100	65	2010	MPI
GP-38	720-724	5	2000	65	1976	EMD
SW-1	737	1	600	50	1947	EMD
SW-1000	790-799	6	1000	50	1950	EMD

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